

Hillsborough County
Florida

HDR

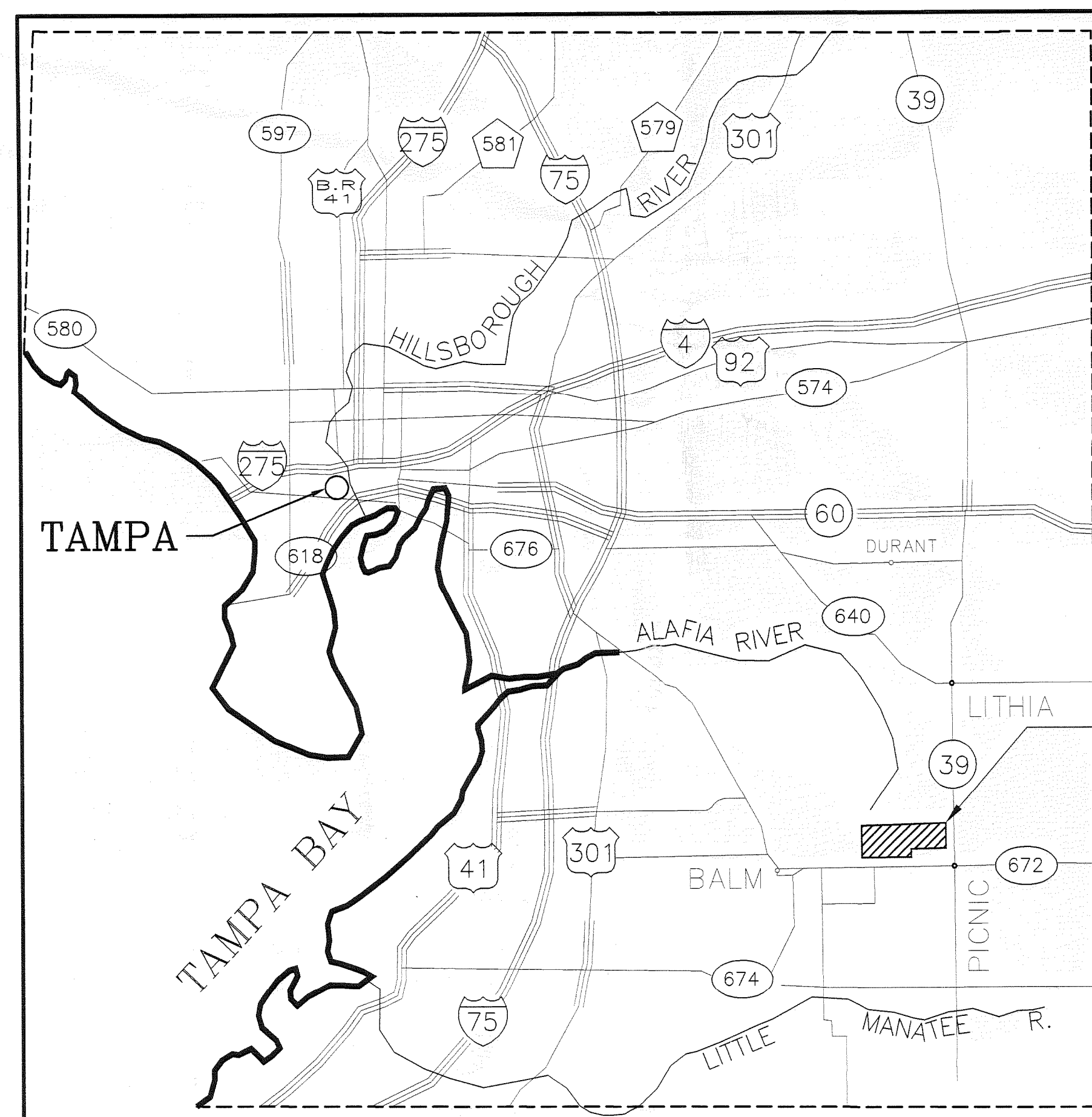
HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213

Conceptual Drawings For

SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER

INDEX OF DRAWINGS

G-01	COVER SHEET
G-02	GENERAL NOTES AND LEGEND
C-01	OVERALL SITE PLAN
C-02	EXISTING CONDITIONS
C-03	GEOTECHNICAL BORINGS AND LIMITS OF IMPACTED CLAY LINER
C-04	SHEET PILE CUT-OFF WALL EXCAVATION PLAN
C-05	SHEET PILE CUT-OFF WALL INSTALLATION PLAN
C-06	CLOSURE GRADING PLAN
C-07	GCCS EXISTING CONDITIONS AND DEMOLITION PLAN
C-08	GCCS PROPOSED REPAIR PLAN
C-09	CLAY LINER BORINGS SECTIONS A AND B
C-10	CLAY LINER BORINGS SECTION C
C-11	CLAY LINER BORINGS SECTIONS D & E
C-12	DETAIL SHEET 1
C-13	GCCS REPAIR DETAILS 1
C-14	GCCS REPAIR DETAILS 2
C-15	GCCS REPAIR DETAILS 3



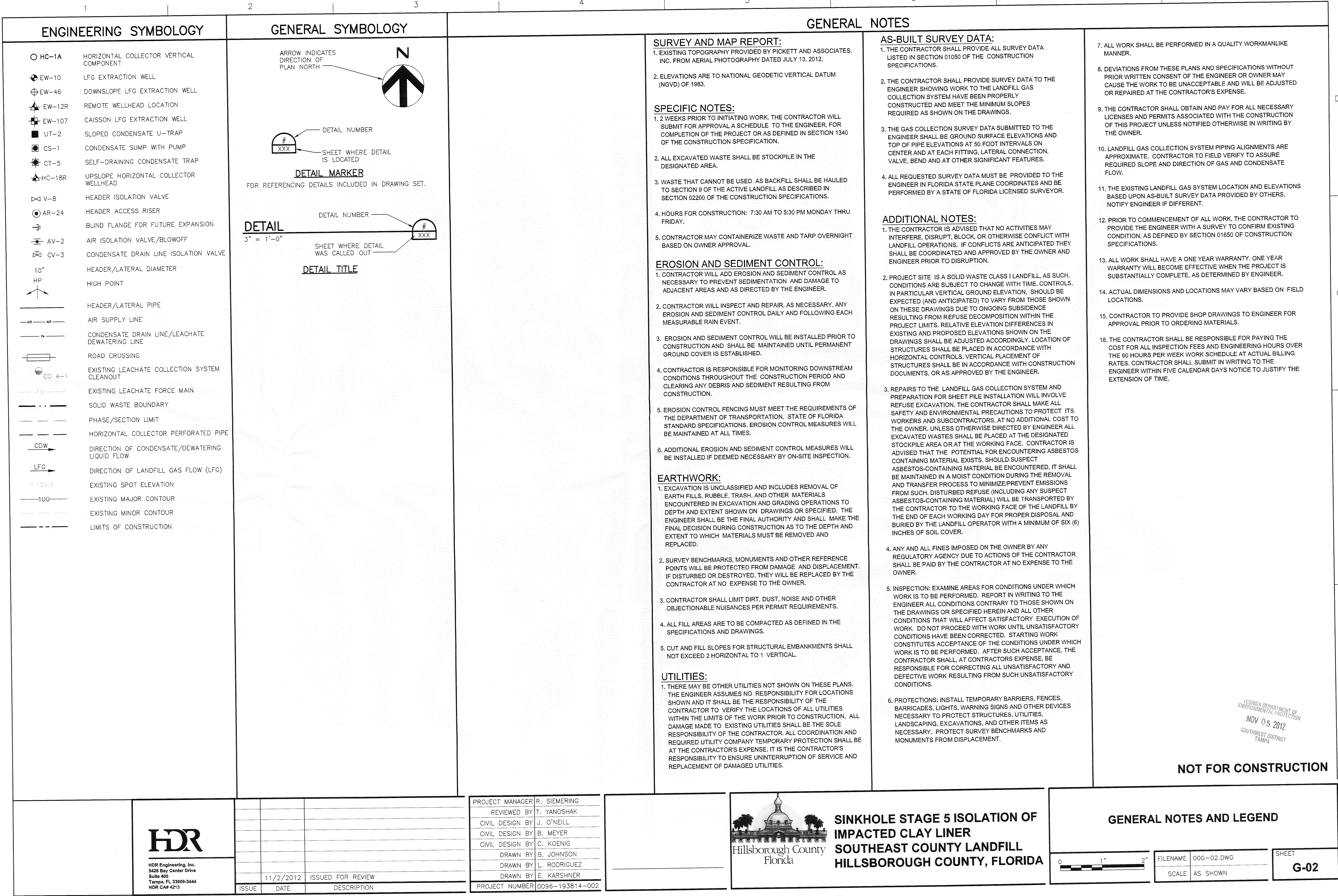
PROJECT
LOCATION

Project No.
096-193814-002

LITHIA, FLORIDA
NOVEMBER 2012

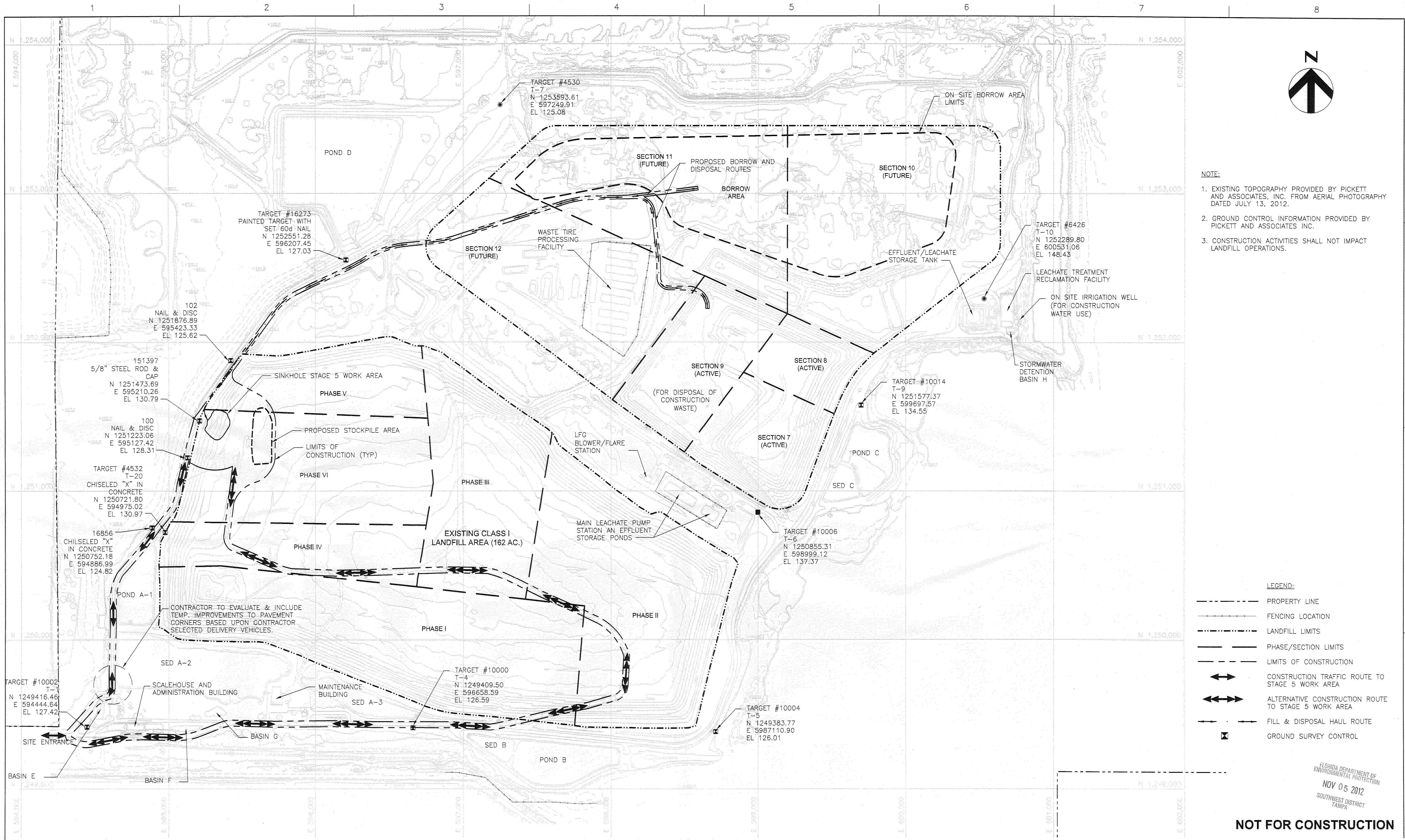
**ISSUED FOR REVIEW
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NOTE:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 13, 2012.
2. GROUND CONTROL INFORMATION PROVIDED BY PICKETT AND ASSOCIATES INC.
3. CONSTRUCTION ACTIVITIES SHALL NOT IMPACT LANDFILL OPERATIONS.

- LEGEND:
- PROPERTY LINE
 - - - FENCING LOCATION
 - - - LANDFILL LIMITS
 - - - PHASE/SECTION LIMITS
 - - - LIMITS OF CONSTRUCTION
 - ↔ CONSTRUCTION TRAFFIC ROUTE TO STAGE 5 WORK AREA
 - ↔↔ ALTERNATIVE CONSTRUCTION ROUTE TO STAGE 5 WORK AREA
 - - - FILL & DISPOSAL HAUL ROUTE
 - ⊠ GROUND SURVEY CONTROL

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PROJECT MANAGER	R. SIEMERING
REVIEWED BY	T. YANOSKAK
CIVIL DESIGN BY	J. O'NEILL
CIVIL DESIGN BY	B. MEYER
CIVIL DESIGN BY	C. KOENIG
DRAWN BY	B. JOHNSON
DRAWN BY	L. RODRIGUEZ
DRAWN BY	E. KARSHNER
PROJECT NUMBER	0096-193814-002

SINKHOLE STAGE 5 ISOLATION OF
IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

OVERALL SITE PLAN

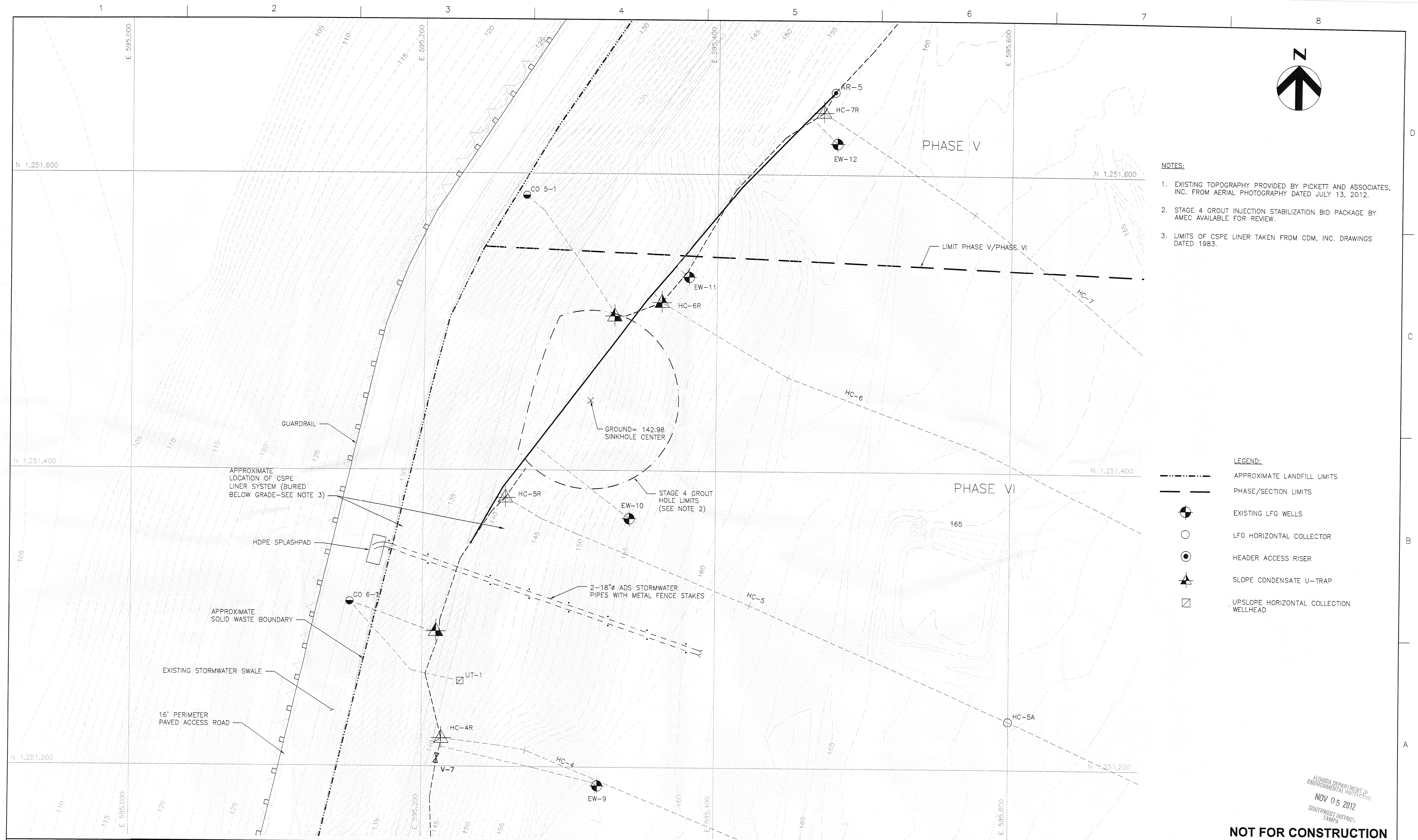


FILENAME	00C-01.DWG
SCALE	1"=300'

SHEET	C-01
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TAMPA

C:\working\hpa\025231\00C-02.dwg, STAGE 5 EXISTING CONDITIONS, 11/2/2012 12:26:52 PM, hrdjg



- NOTES:
1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 13, 2012.
 2. STAGE 4 GROUT INJECTION STABILIZATION BID PACKAGE BY AMEC AVAILABLE FOR REVIEW.
 3. LIMITS OF CSPE LINER TAKEN FROM CDM, INC. DRAWINGS DATED 1983.

- LEGEND:
- APPROXIMATE LANDFILL LIMITS
 - - - PHASE/SECTION LIMITS
 - EXISTING LFG WELLS
 - LFG HORIZONTAL COLLECTOR
 - ⊙ HEADER ACCESS RISER
 - ▲ SLOPE CONDENSATE U-TRAP
 - UPSLOPE HORIZONTAL COLLECTION WELLHEAD

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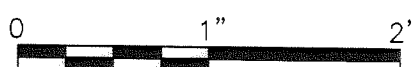
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**SINKHOLE STAGE 5 ISOLATION OF
IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

EXISTING CONDITIONS

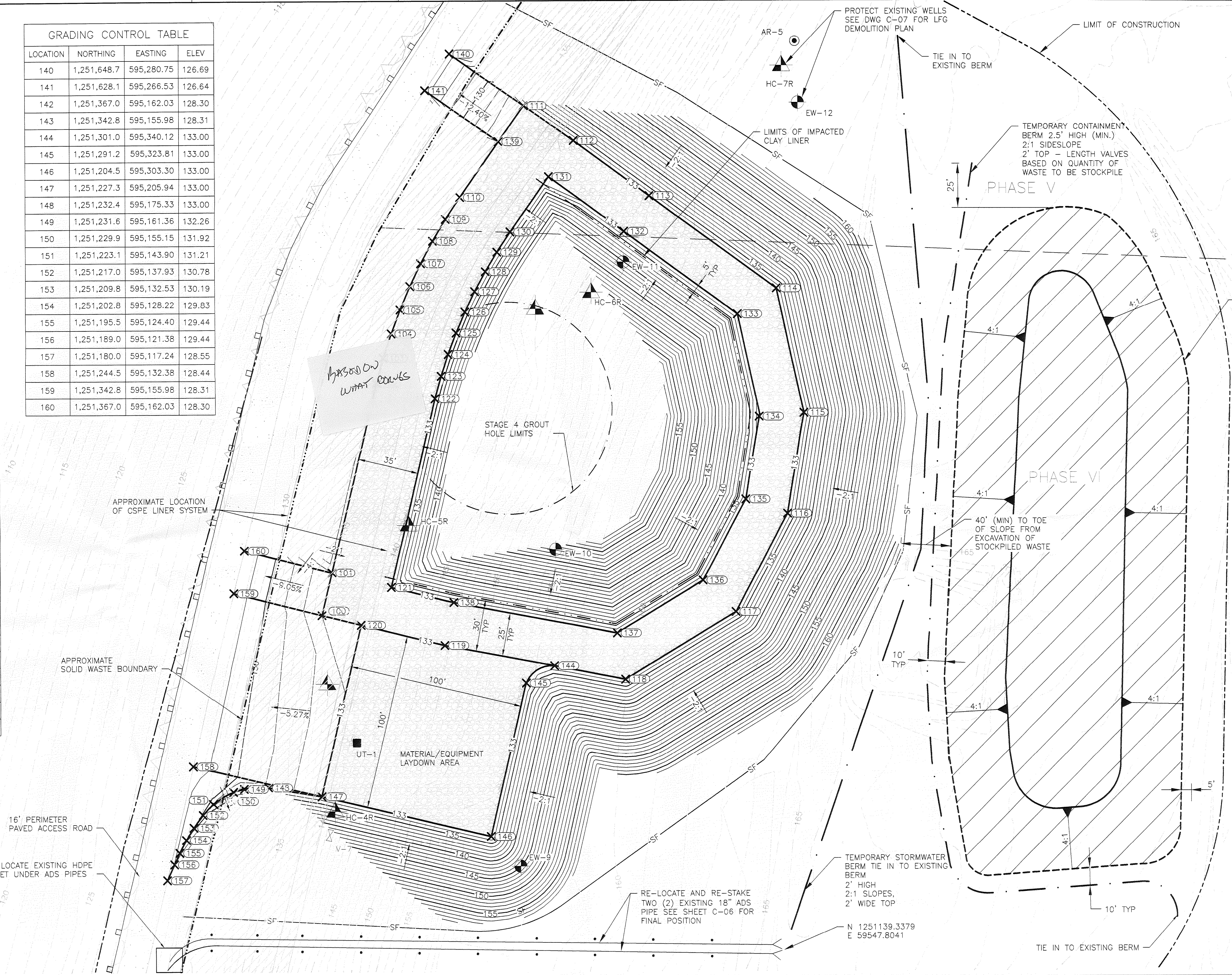


FILENAME 00C-02.dwg
SCALE 1"=30'

SHEET
C-02

GRADING CONTROL TABLE			
LOCATION	NORTHING	EASTING	ELEV
100	1,251,330.2	595,206.38	133.00
101	1,251,354.5	595,212.26	133.00
102	1,251,461.9	595,238.02	133.00
103	1,251,476.1	595,242.00	133.00
104	1,251,489.8	595,246.54	133.00
105	1,251,503.4	595,251.70	133.00
106	1,251,516.7	595,257.44	133.00
107	1,251,529.7	595,263.78	133.00
108	1,251,542.5	595,270.69	133.00
109	1,251,554.9	595,278.17	133.05
110	1,251,567.4	595,286.49	133.00
111	1,251,619.3	595,323.18	133.00
112	1,251,599.4	595,351.94	133.00
113	1,251,568.0	595,395.80	133.00
114	1,251,515.3	595,468.75	133.00
115	1,251,444.6	595,484.40	133.00
116	1,251,387.4	595,474.79	133.00
117	1,251,331.5	595,444.89	133.00
118	1,251,293.2	595,381.36	133.00
119	1,251,313.0	595,277.14	133.00
120	1,251,324.6	595,228.76	133.00
121	1,251,346.1	595,246.26	133.00
122	1,251,453.1	595,271.90	133.00
123	1,251,465.9	595,275.48	133.00
124	1,251,478.1	595,279.54	133.00
125	1,251,490.2	595,284.13	133.00
126	1,251,502.1	595,289.26	133.00
127	1,251,513.7	595,294.91	133.00
128	1,251,525.1	595,301.08	133.00
129	1,251,536.1	595,307.75	133.00
130	1,251,547.6	595,315.37	133.00
131	1,251,578.9	595,337.54	133.00
132	1,251,547.7	595,381.15	133.00
133	1,251,500.6	595,446.40	133.00
134	1,251,442.5	595,458.69	133.00
135	1,251,395.6	595,450.81	133.00
136	1,251,349.4	595,426.09	133.00
137	1,251,319.5	595,376.62	133.00
138	1,251,337.4	595,282.38	133.00
139	1,251,598.9	595,308.75	133.00

GRADING CONTROL TABLE			
LOCATION	NORTHING	EASTING	ELEV
140	1,251,648.7	595,280.75	126.69
141	1,251,628.1	595,266.53	126.64
142	1,251,367.0	595,162.03	128.30
143	1,251,342.8	595,155.98	128.31
144	1,251,301.0	595,340.12	133.00
145	1,251,291.2	595,323.81	133.00
146	1,251,204.5	595,303.30	133.00
147	1,251,227.3	595,205.94	133.00
148	1,251,232.4	595,175.33	133.00
149	1,251,231.6	595,161.36	132.26
150	1,251,229.9	595,155.15	131.92
151	1,251,223.1	595,143.90	131.21
152	1,251,217.0	595,137.93	130.78
153	1,251,209.8	595,132.53	130.19
154	1,251,202.8	595,128.22	129.83
155	1,251,195.5	595,124.40	129.44
156	1,251,189.0	595,121.38	129.44
157	1,251,180.0	595,117.24	128.55
158	1,251,244.5	595,132.38	128.44
159	1,251,342.8	595,155.98	128.31
160	1,251,367.0	595,162.03	128.30



- LEGEND:
- X155 SHEET PILE CUT-OFF WALL EXCAVATION GRADING CONTROL LOCATION
 - STABILIZED WORK AREA (EL 133)
 - SF SILT-FENCE (TRENCHED AND BACKFILLED)

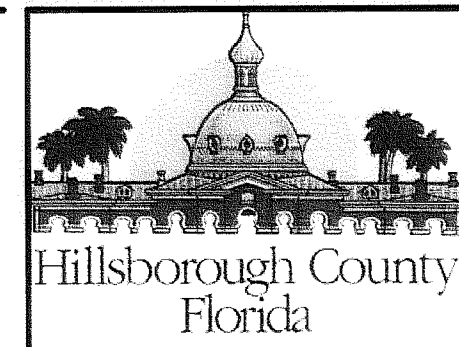
- NOTES:
- EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 13, 2012.
 - LFG SYSTEM NOT SHOWN FOR CLARITY OF DRAWING. SEE SHEET C-07 FOR LFG SYSTEM WORK.
 - WASTE EXPOSED ON EXCAVATION SLOPES TO BE COVERED WITH MIN. OF 12" SOIL.
 - CONTRACTOR TO SCHEDULE DELIVERY STORAGE OF MATERIAL TO FIT INTO LAYDOWN AREA.
 - STORMWATER COMING IN CONTACT WITH WASTE SHALL BE CONTAINED AND NOT ALLOWED TO ENTER INTO STORMWATER CONVEGANCE SYSTEMS.
 - EXPOSED WASTE SHALL NOT BE ALLOWED OVERNIGHT.

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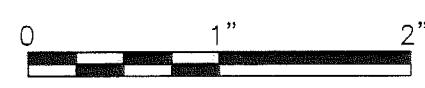
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REVIEWED BY	T. YANOSHAK
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PROJECT NUMBER	0096-193814-002



SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

SHEET PILE CUT-OFF WALL EXCAVATION PLAN

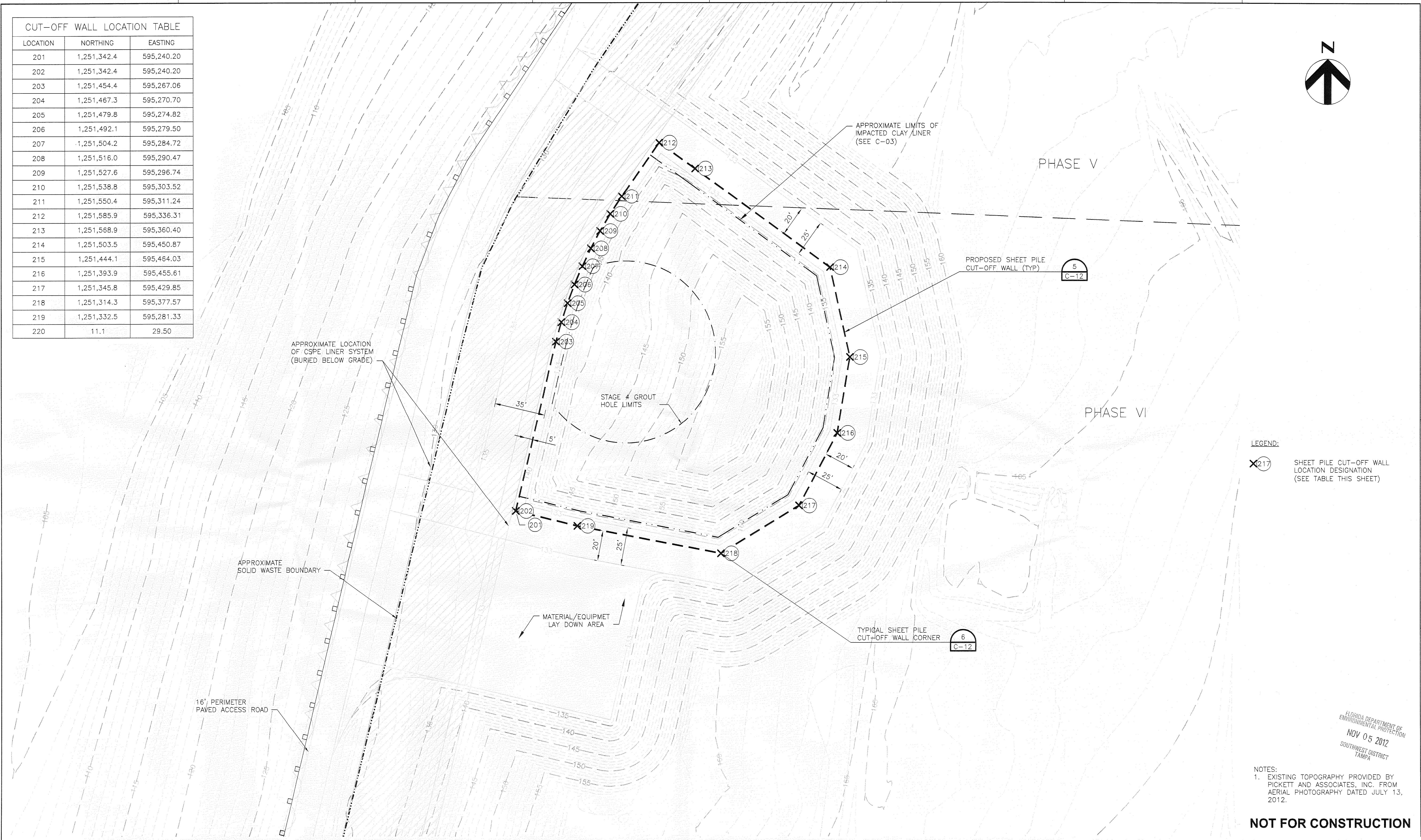


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SHEET
C-04

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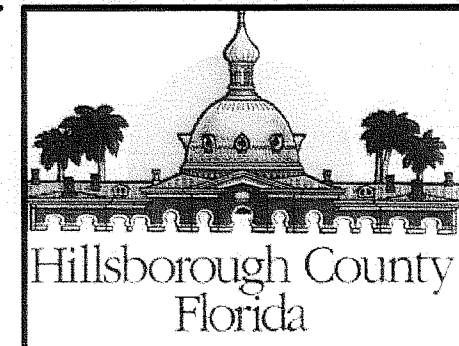
CUT-OFF WALL LOCATION TABLE		
LOCATION	NORTHING	EASTING
201	1,251,342.4	595,240.20
202	1,251,342.4	595,240.20
203	1,251,454.4	595,267.06
204	1,251,467.3	595,270.70
205	1,251,479.8	595,274.82
206	1,251,492.1	595,279.50
207	1,251,504.2	595,284.72
208	1,251,516.0	595,290.47
209	1,251,527.6	595,296.74
210	1,251,538.8	595,303.52
211	1,251,550.4	595,311.24
212	1,251,585.9	595,336.31
213	1,251,568.9	595,360.40
214	1,251,503.5	595,450.87
215	1,251,444.1	595,464.03
216	1,251,393.9	595,455.61
217	1,251,345.8	595,429.85
218	1,251,314.3	595,377.57
219	1,251,332.5	595,281.33
220	11.1	29.50



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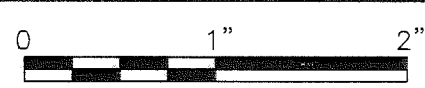
ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	R. SIEMERING
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CIVIL DESIGN BY	B. MEYER
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DRAWN BY	B. JOHNSON
DRAWN BY	L. RODRIGUEZ
DRAWN BY	E. KARSHNER
PROJECT NUMBER	0096-193814-002



SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

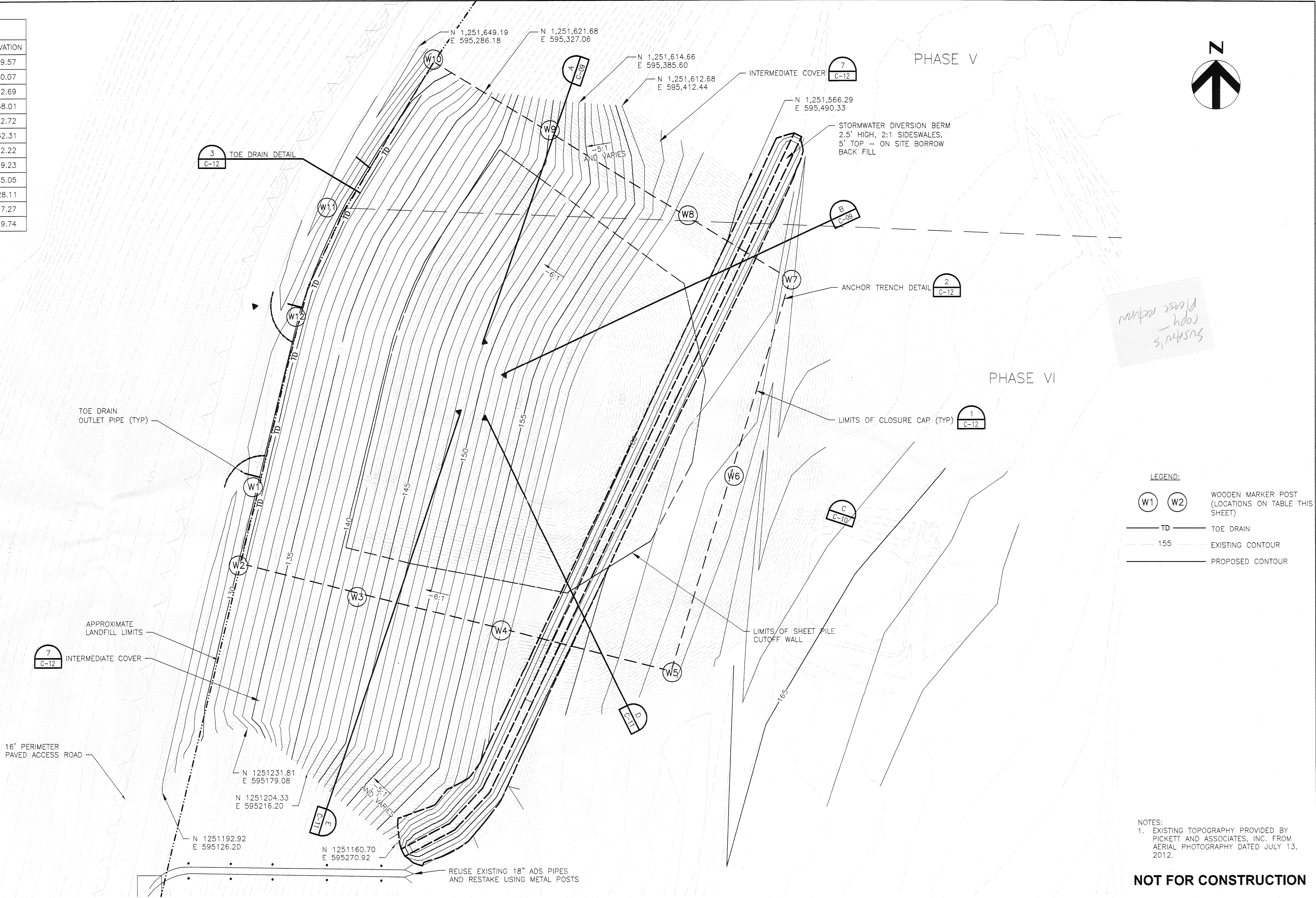
SHEET PILE CUT-OFF WALL INSTALLATION PLAN



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SHEET	C-05
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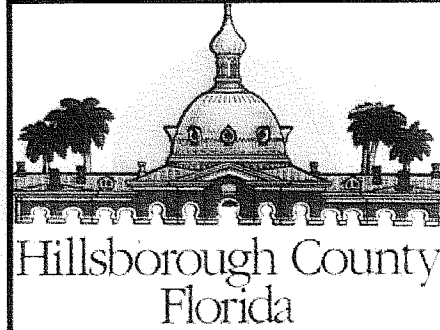
LIMITS OF CLOSURE CAP			
POINT	NORTHING	EASTING	ELEVATION
W1	1251380.058	595182.835	129.57
W2	1251331.551	595173.776	130.07
W3	1251312.334	595247.065	142.69
W4	1251291.377	595336.552	158.01
W5	1251265.519	595442.882	162.72
W6	1251385.801	595481.428	162.31
W7	1251505.797	595517.358	162.22
W8	1251545.431	595453.354	159.23
W9	1251597.706	595367.514	145.05
W10	1251641.067	595295.195	128.11
W11	1251550.704	595229.131	127.27
W12	1251483.743	595209.767	129.74



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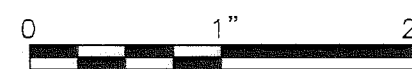
PROJECT MANAGER	R. SIEMERING
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**SINKHOLE STAGE 5 ISOLATION OF
IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

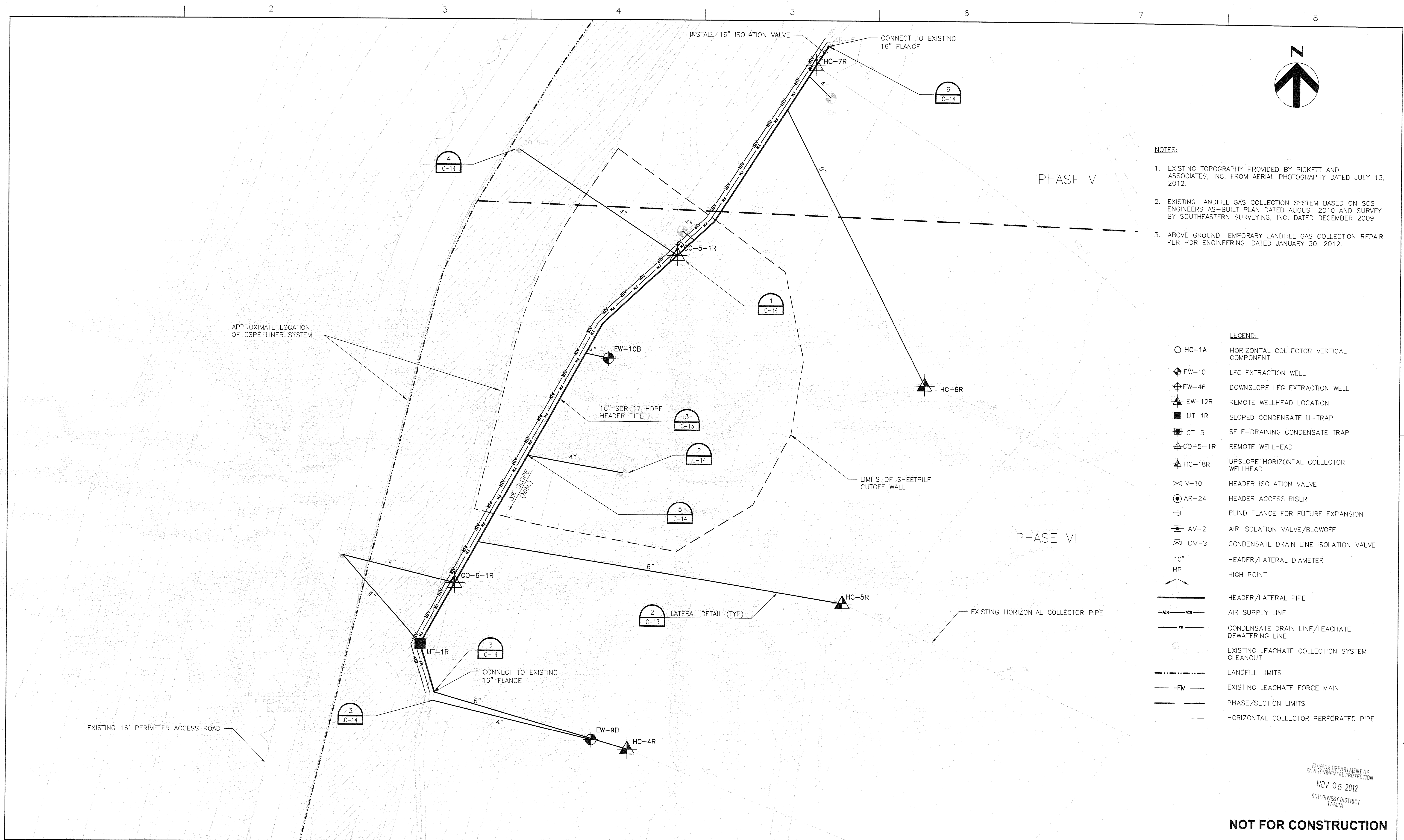
CLOSURE GRADING PLAN

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
NOV 05 2012
SOUTHWEST DISTRICT
TAMPA



FILENAME	00C-06.dwg
SCALE	1"=30'

SHEET	C-06
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- NOTES:
- EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 13, 2012.
 - EXISTING LANDFILL GAS COLLECTION SYSTEM BASED ON SCS ENGINEERS AS-BUILT PLAN DATED AUGUST 2010 AND SURVEY BY SOUTHEASTERN SURVEYING, INC. DATED DECEMBER 2009
 - ABOVE GROUND TEMPORARY LANDFILL GAS COLLECTION REPAIR PER HDR ENGINEERING, DATED JANUARY 30, 2012.

- LEGEND:
- HC-1A HORIZONTAL COLLECTOR VERTICAL COMPONENT
 - EW-10 LFG EXTRACTION WELL
 - EW-46 DOWNSLOPE LFG EXTRACTION WELL
 - EW-12R REMOTE WELLHEAD LOCATION
 - UT-1R SLOPED CONDENSATE U-TRAP
 - CT-5 SELF-DRAINING CONDENSATE TRAP
 - CO-5-1R REMOTE WELLHEAD
 - HC-18R UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
 - V-10 HEADER ISOLATION VALVE
 - AR-24 HEADER ACCESS RISER
 - BLIND FLANGE FOR FUTURE EXPANSION
 - AV-2 AIR ISOLATION VALVE/BLOWOFF
 - CV-3 CONDENSATE DRAIN LINE ISOLATION VALVE
 - 10" HP HEADER/LATERAL DIAMETER
 - HP HIGH POINT
 - HEADER/LATERAL PIPE
 - AIR AIR SUPPLY LINE
 - FM CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
 - EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
 - LANDFILL LIMITS
 - FM EXISTING LEACHATE FORCE MAIN
 - PHASE/SECTION LIMITS
 - HORIZONTAL COLLECTOR PERFORATED PIPE

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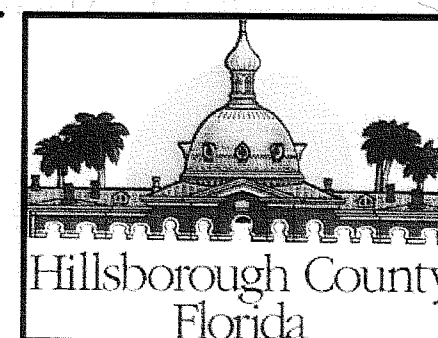
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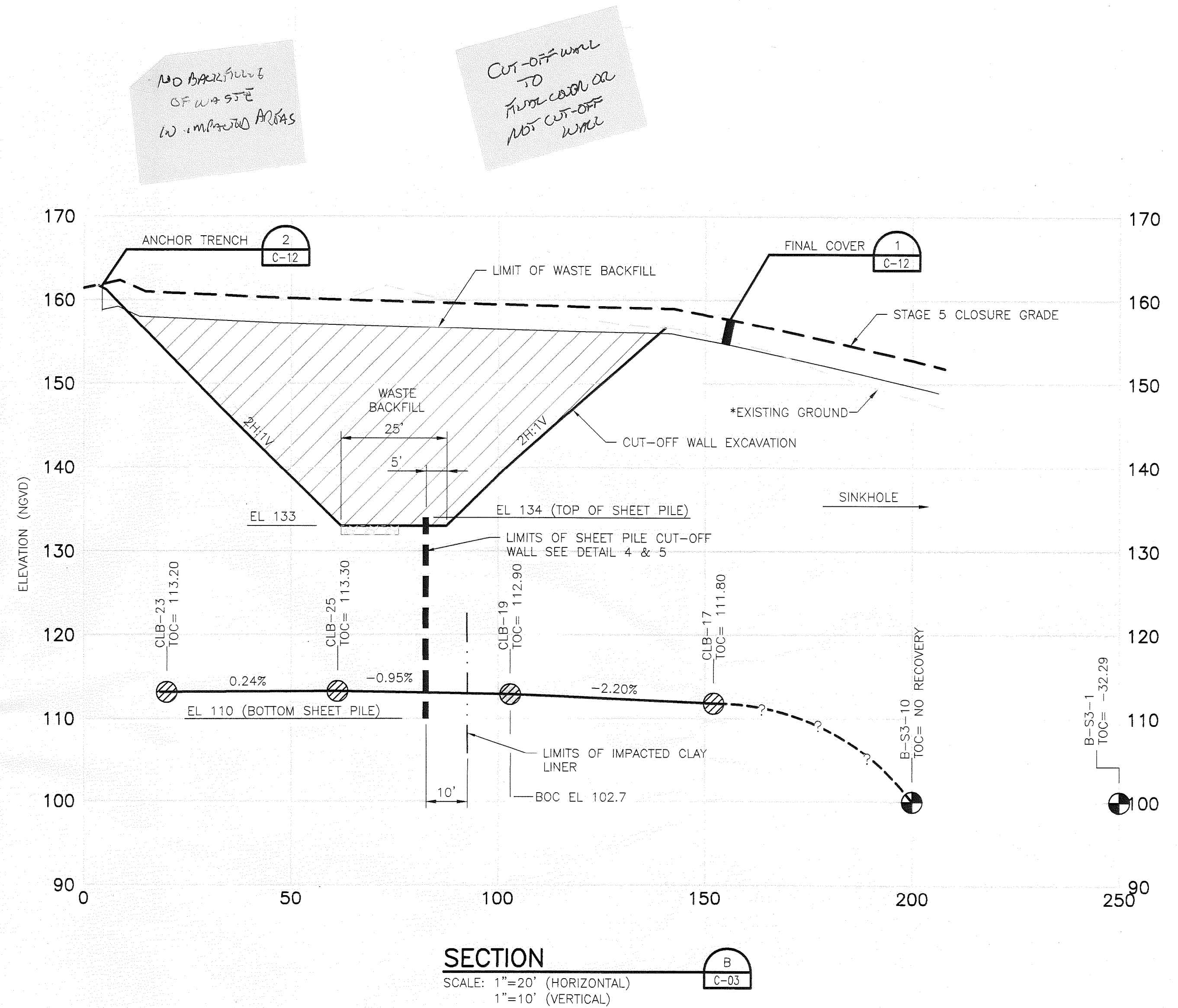
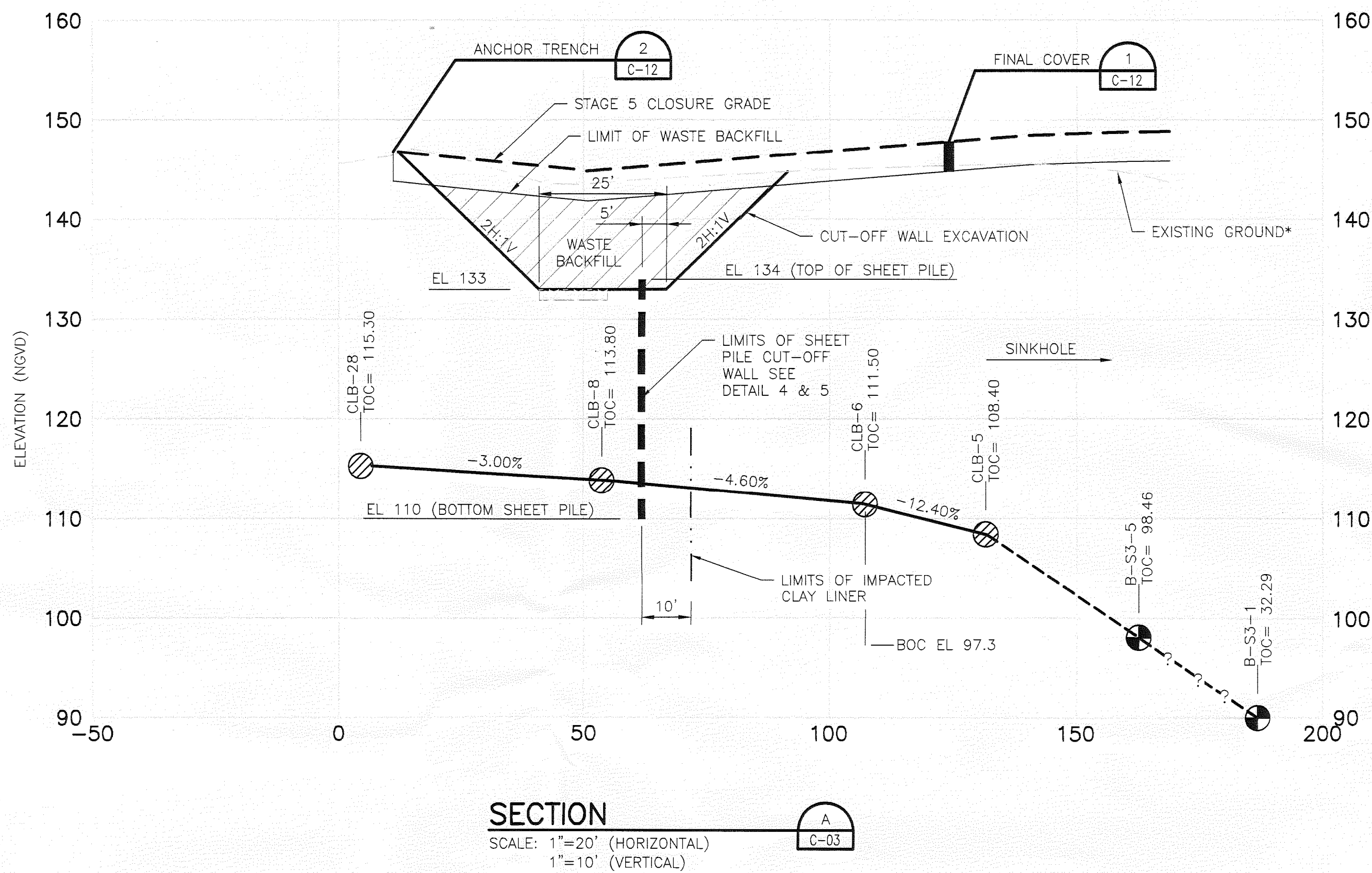
GCCS PROPOSED REPAIR PLAN

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SCALE 1"=30'

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SCALE 1"=30'

SHEET
C-08

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* EXISTING GROUND ELEVATION AS OF JULY 13, 2012.
TOC - TOP OF WASTE PHOSPHATIC CLAY
BOC - BOTTOM OF WASTE PHOSPHATIC CLAY

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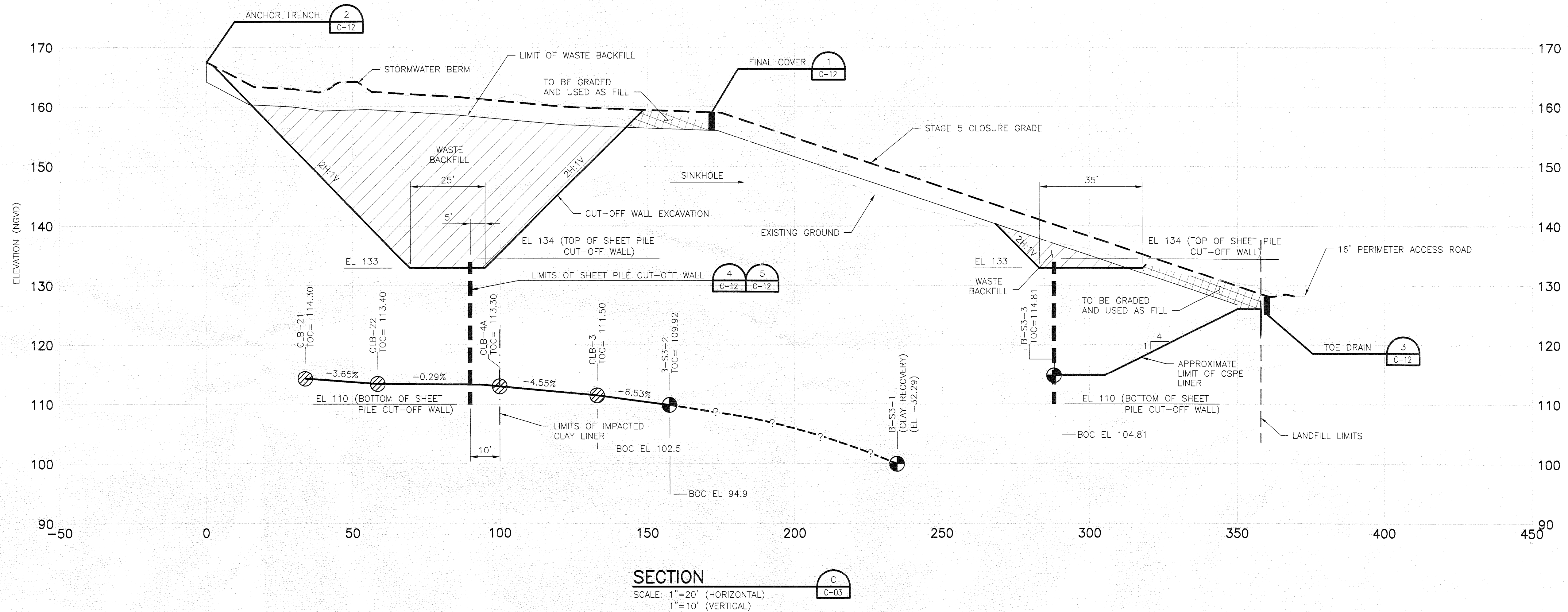
CLAY LINER BORINGS SECTIONS A AND B

0 1" 2"

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SCALE	AS SHOWN

SHEET	C-09
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FLORIDA DEPARTMENT OF
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* EXISTING GROUND ELEVATION AS OF JULY 13, 2012.
TOC - TOP OF WASTE PHOSPHATIC CLAY
BOC - BOTTOM OF WASTE PHOSPHATIC CLAY

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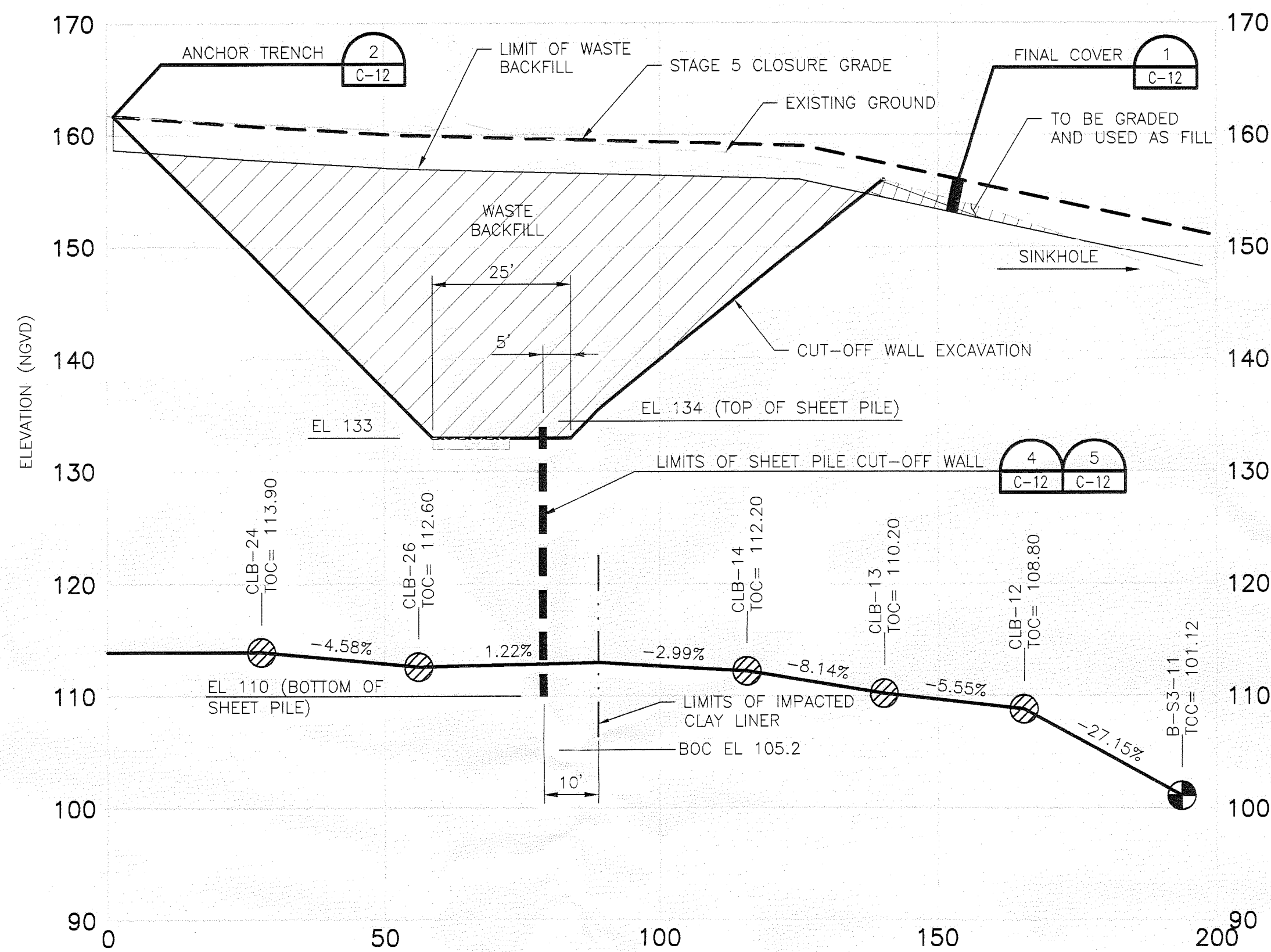
**SINKHOLE STAGE 5 ISOLATION OF
IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

CLAY LINER BORINGS SECTION C

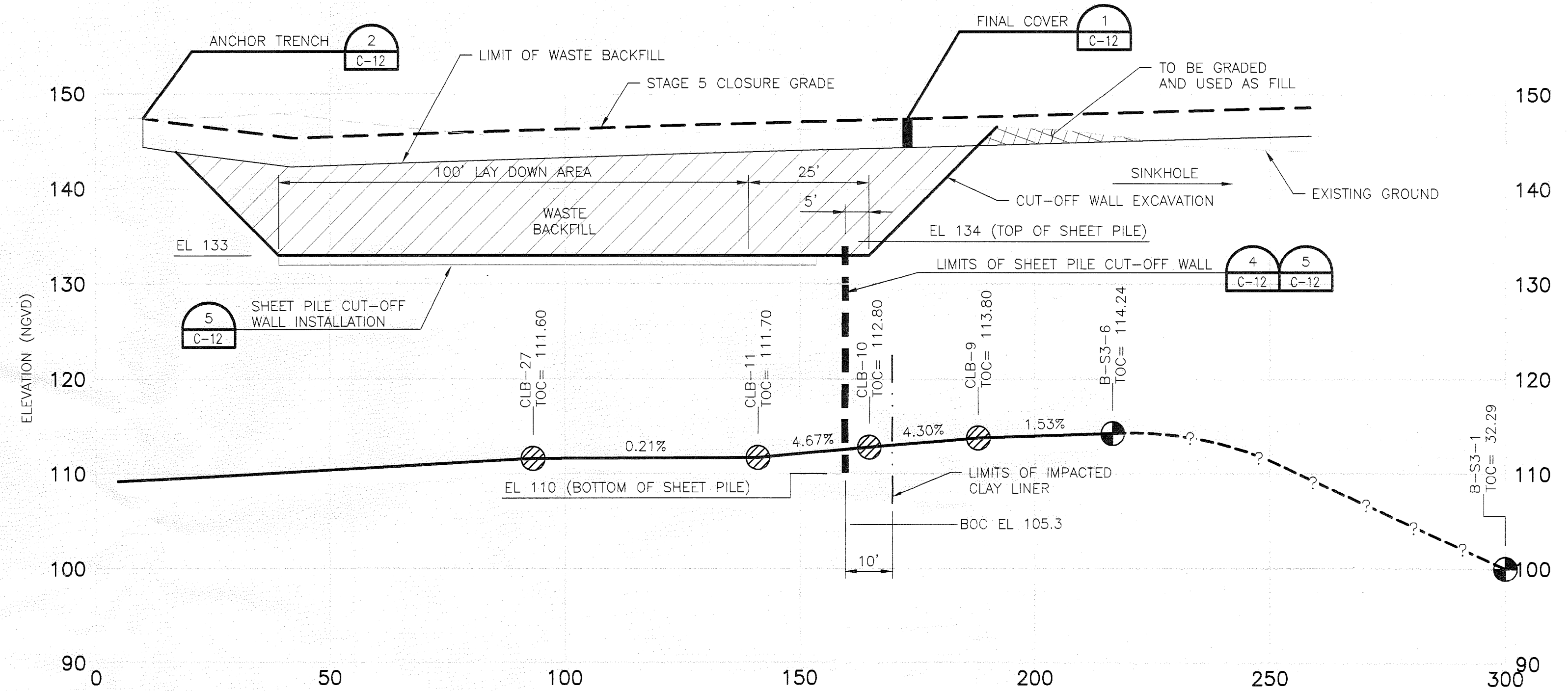
0 1" 2"

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SCALE	AS SHOWN

SHEET	C-10
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SECTION D
SCALE: 1"=20' (HORIZONTAL)
1"=10' (VERTICAL)



SECTION E
SCALE: 1"=20' (HORIZONTAL)
1"=10' (VERTICAL)

* EXISTING GROUND ELEVATION AS OF JULY 13, 2012.
TOC - TOP OF WASTE PHOSPHATIC CLAY
BOC - BOTTOM OF WASTE PHOSPHATIC CLAY

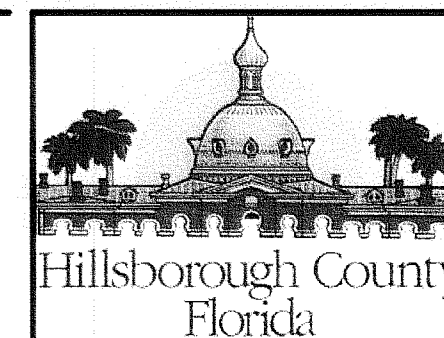
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HDR Engineering, Inc.
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HDR CAP 4213

ISSUE	DATE	DESCRIPTION
	11/2/2012	ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	T. YANOSKAK
CIVIL DESIGN BY	J. O'NEILL
CIVIL DESIGN BY	B. MEYER
CIVIL DESIGN BY	C. KOENIG
DRAWN BY	B. JOHNSON
DRAWN BY	L. RODRIGUEZ
DRAWN BY	E. KARSHNER
PROJECT NUMBER	0096-193814-002



**SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

CLAY LINER BORINGS SECTIONS D & E



FILENAME	00C-02_03.dwg
SCALE	AS SHOWN

SHEET	C-11
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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
NOV 05 2012
SOUTHWEST DISTRICT
TAMPA

FINAL COVER DETAIL

NOT TO SCALE

1
C-06

INTERMEDIATE COVER DETAIL

NOT TO SCALE

7
C-06

TYPICAL SHEET PILE CUT-OFF WALL DETAIL

NOT TO SCALE

4
C-06

TYPICAL CLOSURE CAP ANCHOR TRENCH DETAIL

NOT TO SCALE

2
C-06

TYP. SHEET PILE CUT-OFF WALL
INSTALLATION DETAIL

NOT TO SCALE

5
C-05

NOTES:

- ① 5' (MIN) BUT VARIES WITH SHEET PILE LAYOUT.
- ② VARIES ON CONTRACTOR REQUIREMENTS.

TYPICAL TOE DRAIN DETAIL

NOT TO SCALE

3
C-06

SHEET PILE CUT-OFF WALL
CORNER DETAIL

NOT TO SCALE

6
C-05

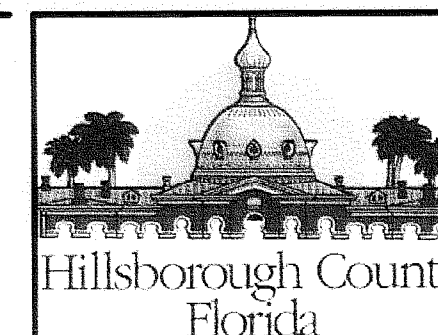
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SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

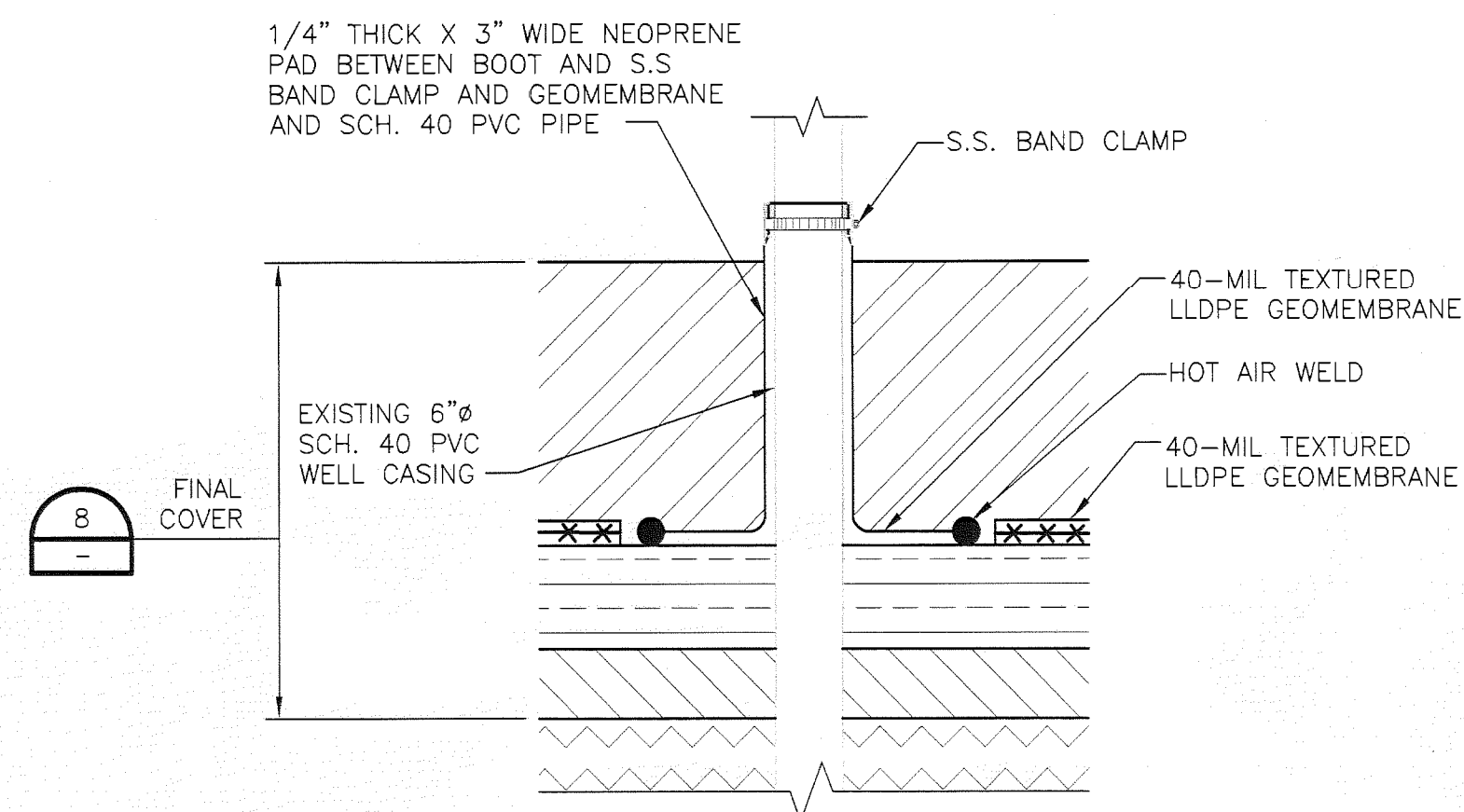
DETAIL SHEET 1

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
NOV 05 2012
SOUTHWEST DISTRICT
TAMPA

SHEET

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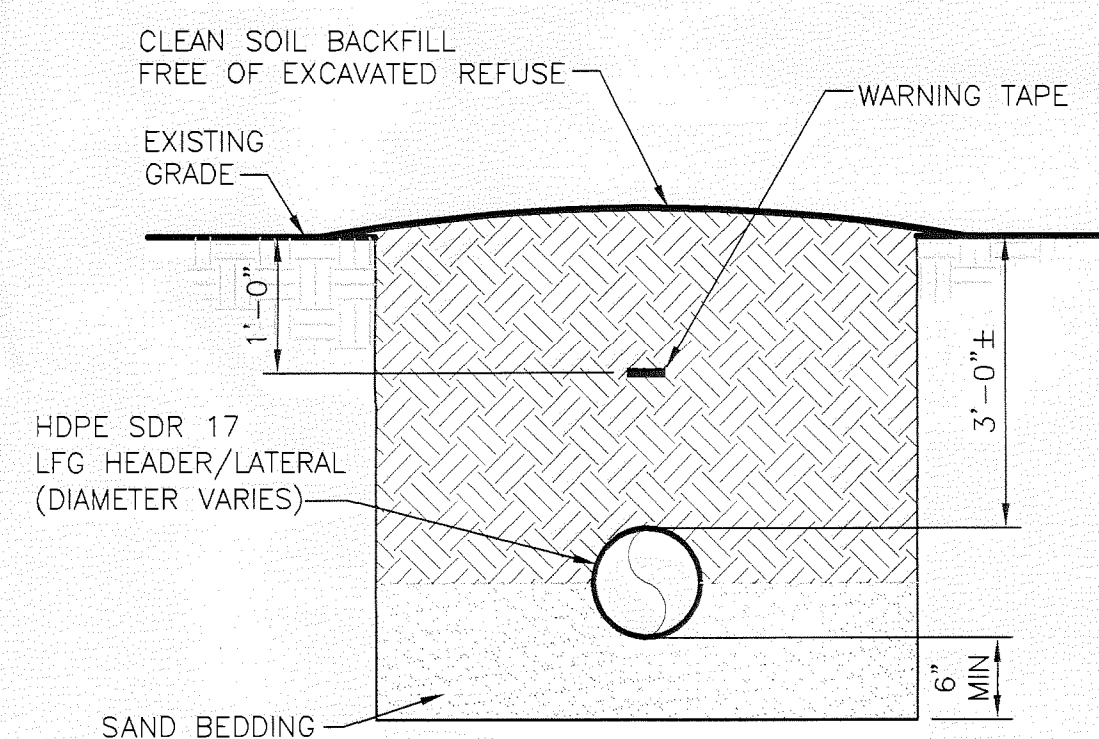
C-12



**LANDFILL GAS EXTRACTION
WELL BOOT DETAIL**

NOT TO SCALE

1
C-08



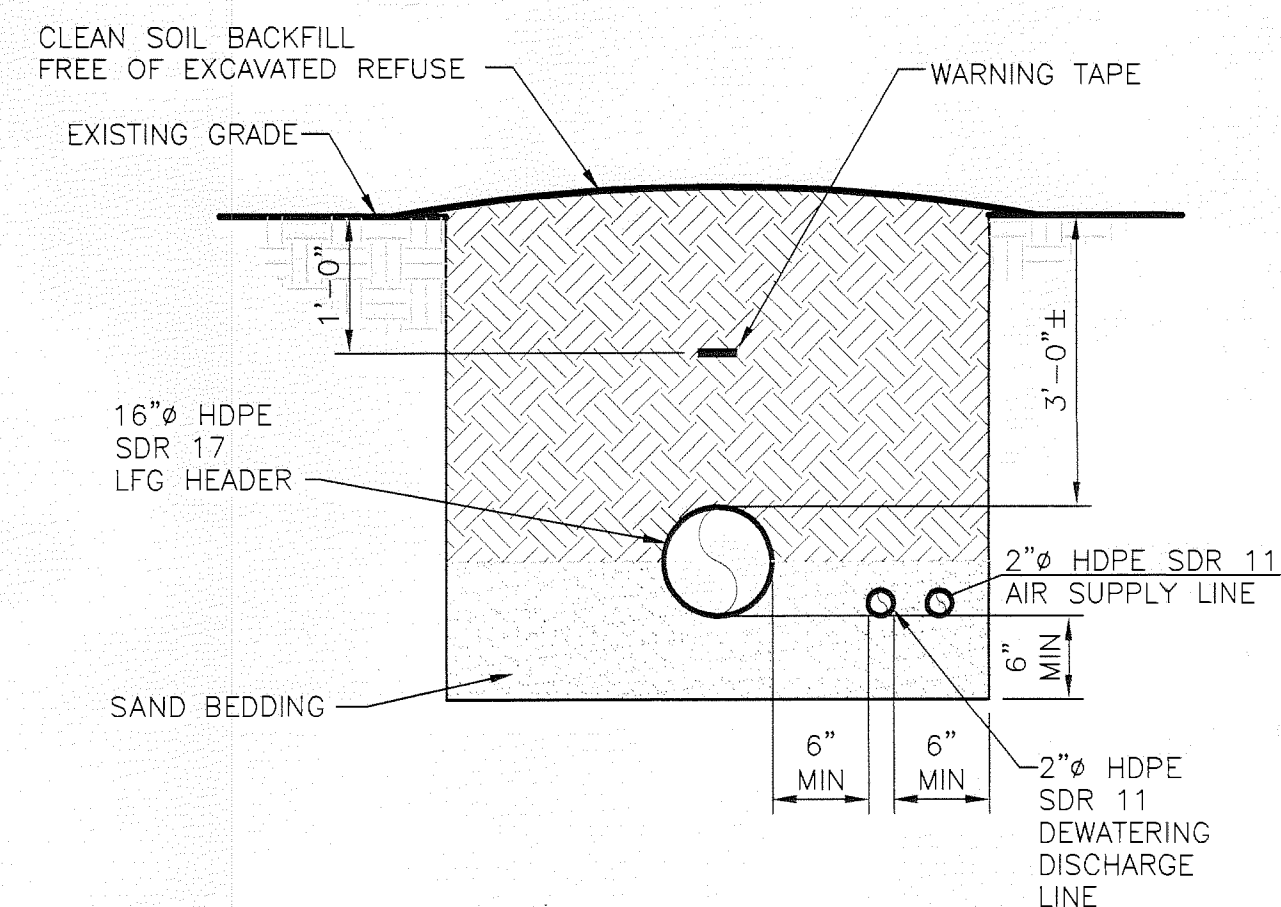
**LATERAL
TRENCH DETAIL**

NOT TO SCALE

2
C-08

NOTES:

1. LATERALS SHALL BE SDR 17 WITH DIAMETERS SHOWN ON THE PLANS, AND INSTALLED WITH MINIMUM 3% SLOPE.
2. INSTALL FINAL COVER IN AREAS SHOWN ON PLANS.



**HEADER
TRENCH DETAIL**

NOT TO SCALE

3
C-08

NOTES:

1. HEADER SHALL BE HDPE SDR 17, WITH THE DIAMETERS AND MINIMUM 3% SLOPES AS SHOWN ON THE PLANS.
2. INSTALL FINAL COVER IN AREAS SHOWN ON PLANS.
3. DEWATERING DISCHARGE LINE AND AIR SUPPLY LINE SHALL BE 2" HDPE SDR 11.

NOT FOR CONSTRUCTION

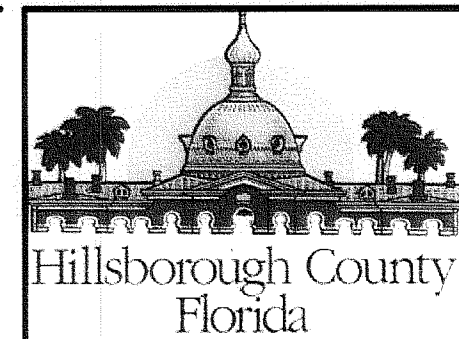


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**SINKHOLE STAGE 5 ISOLATION OF
IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

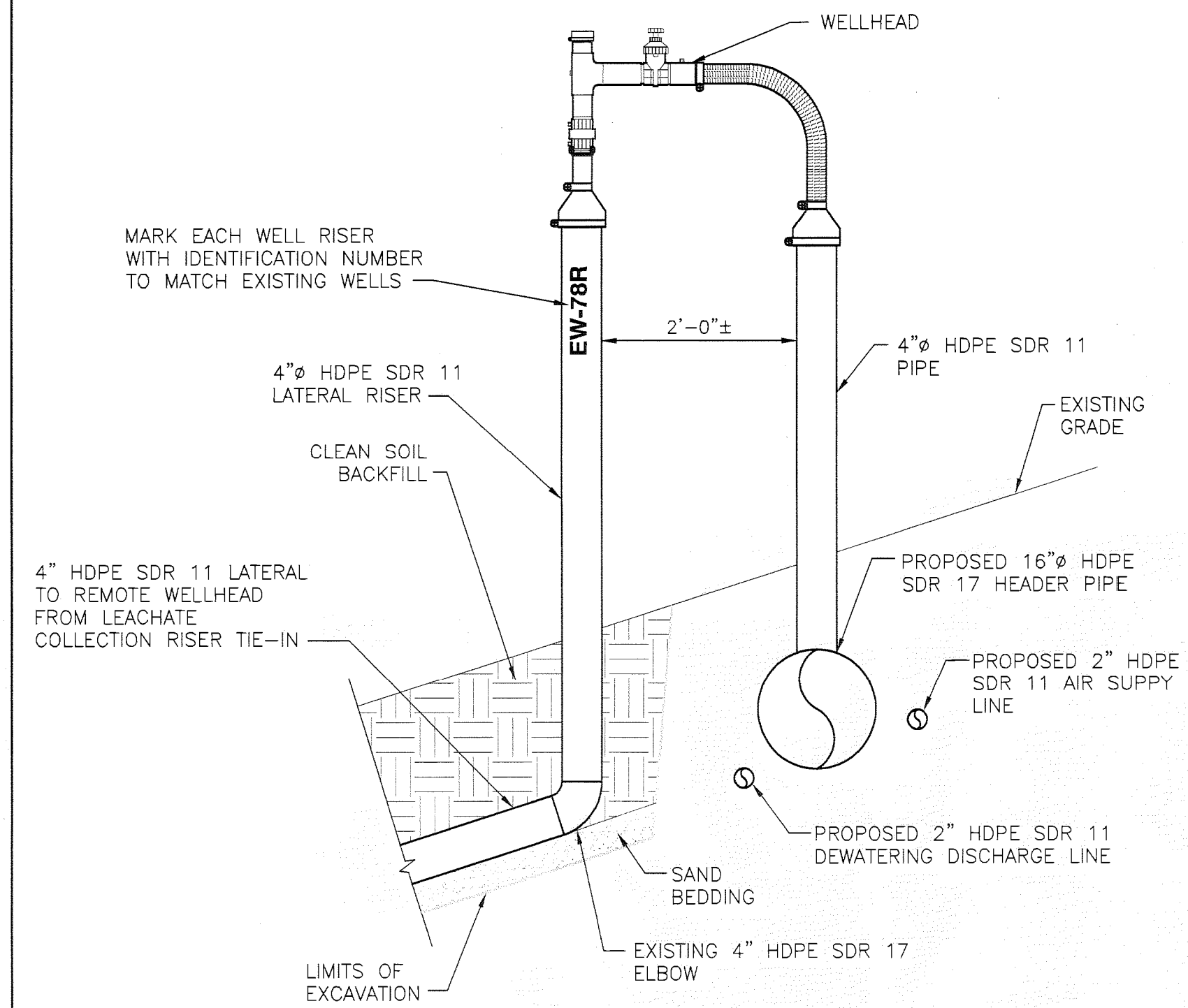
GCCS REPAIR DETAILS 1

FLORIDA DEPARTMENT OF
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TAMPA

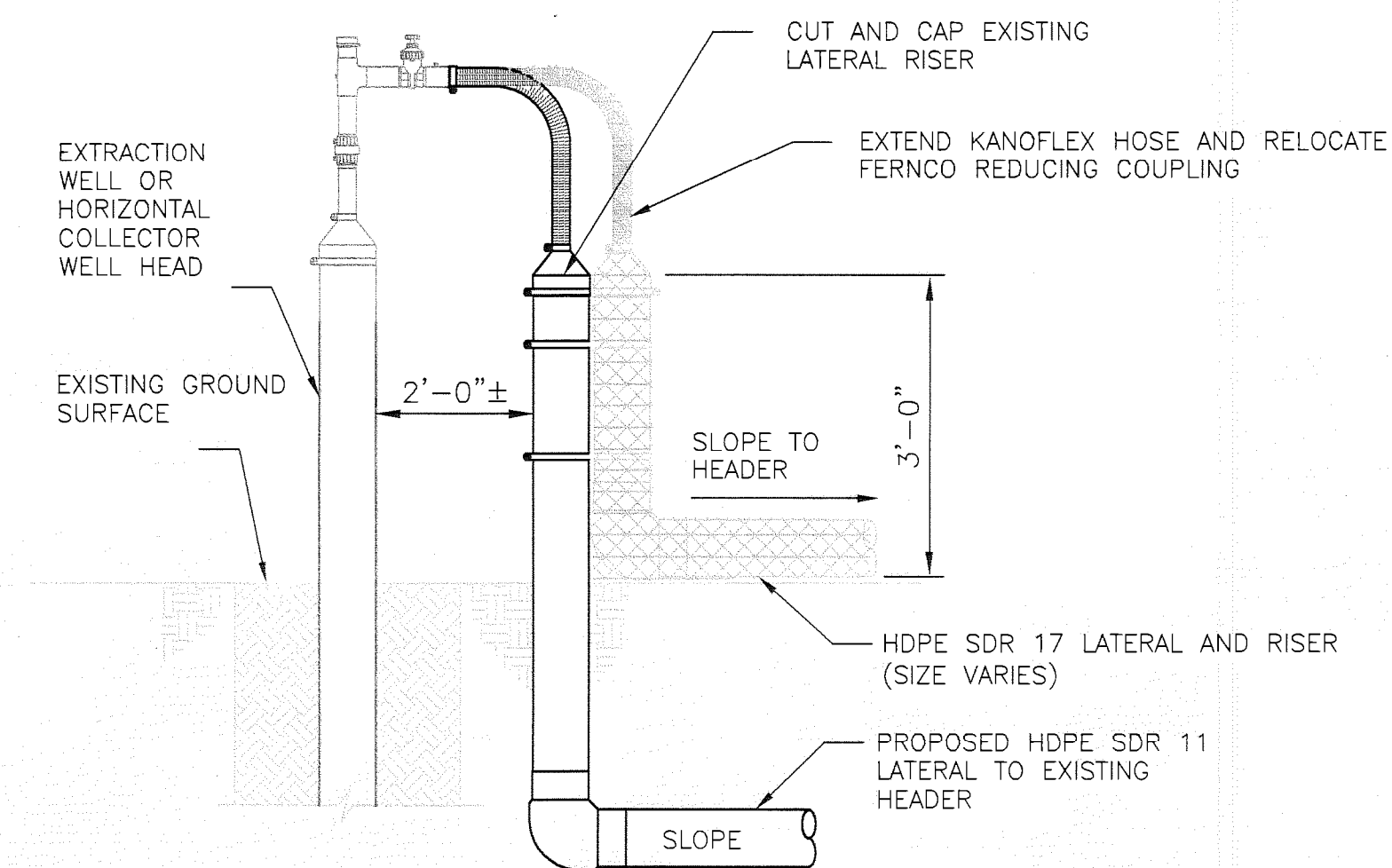


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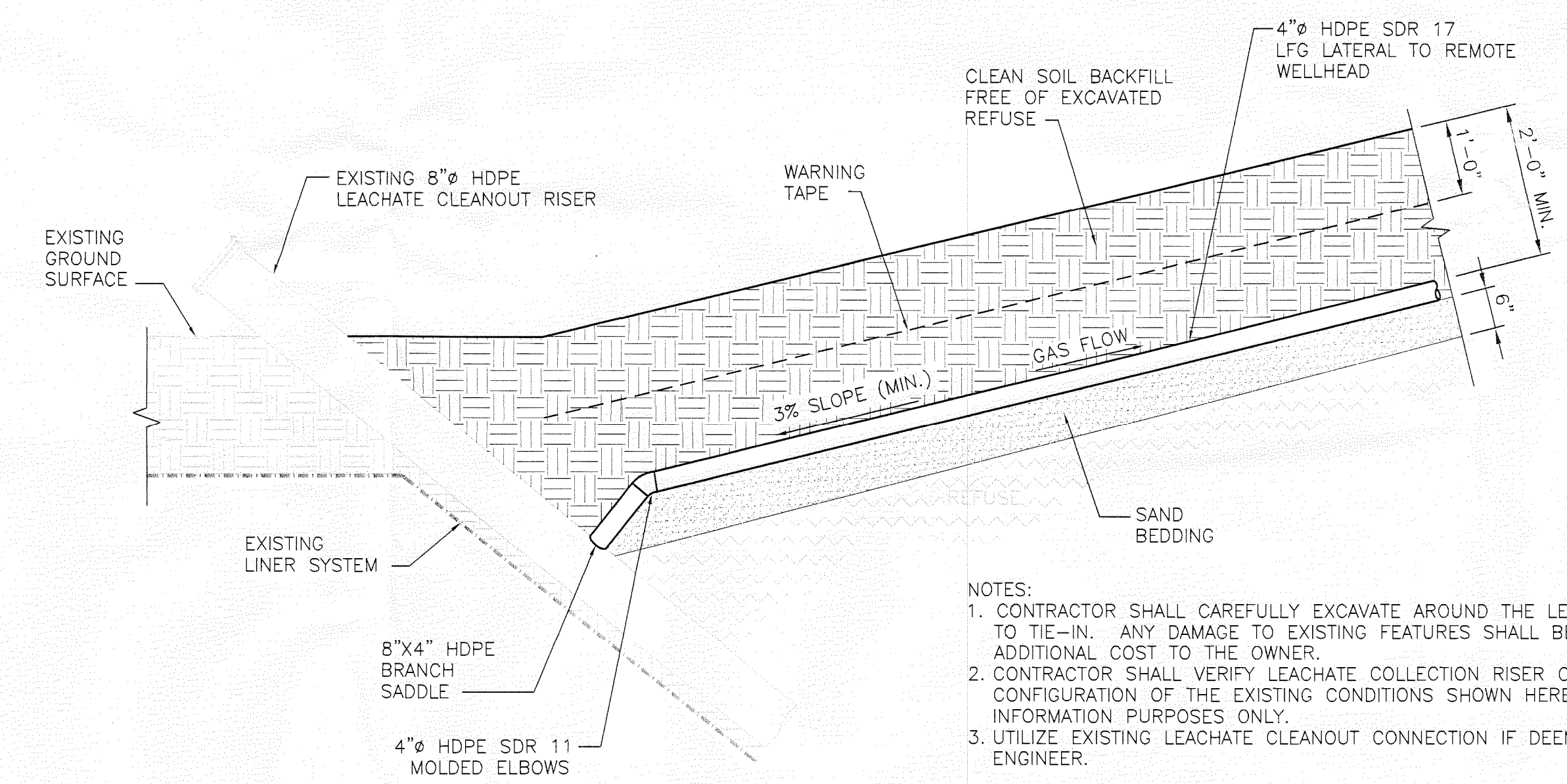
SHEET
C-13



REMOTE WELLHEAD DETAIL 1
NOT TO SCALE
C-08

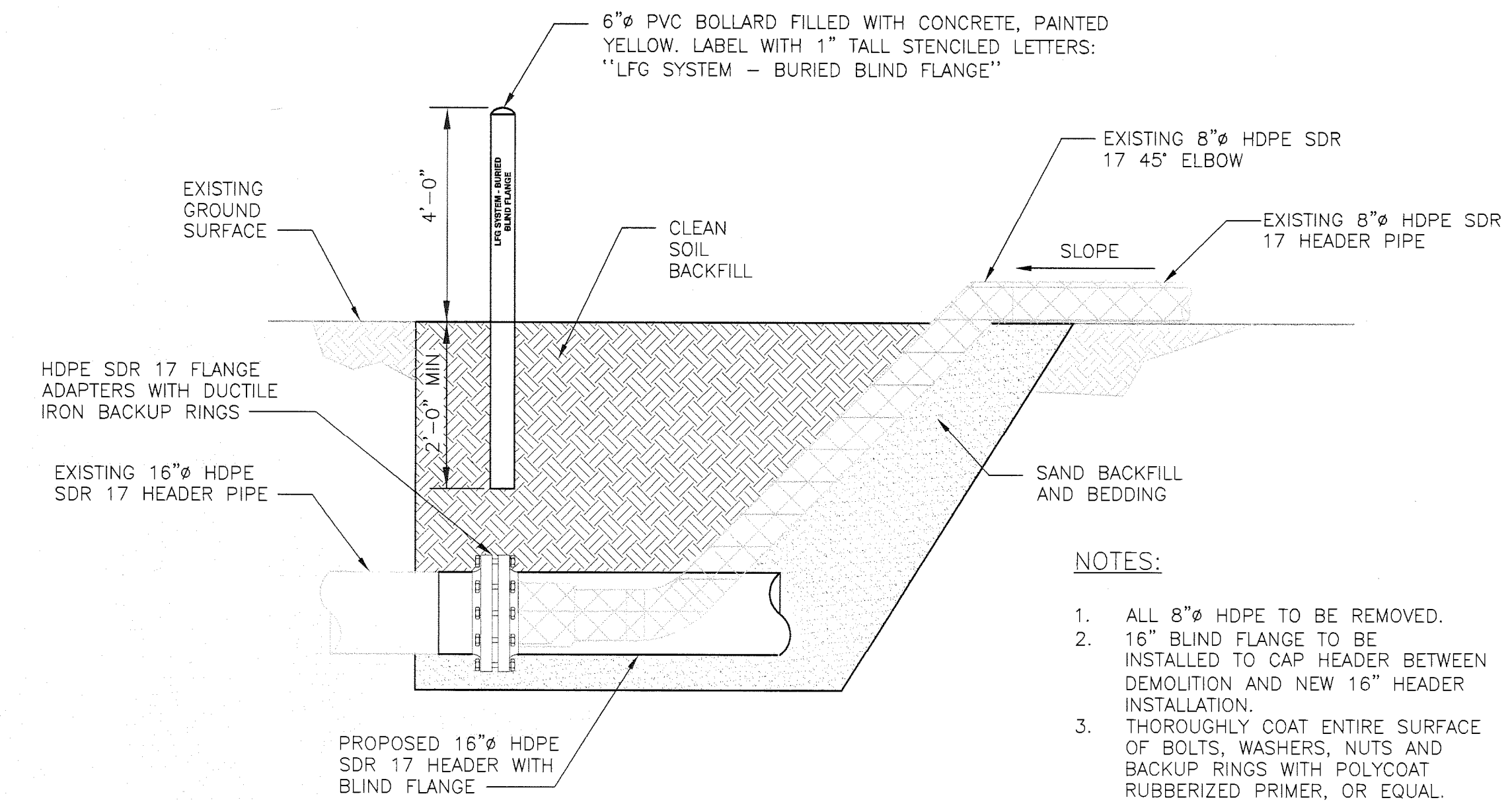


TYPICAL LATERAL-RISER CONNECTION 2
NOT TO SCALE
C-08

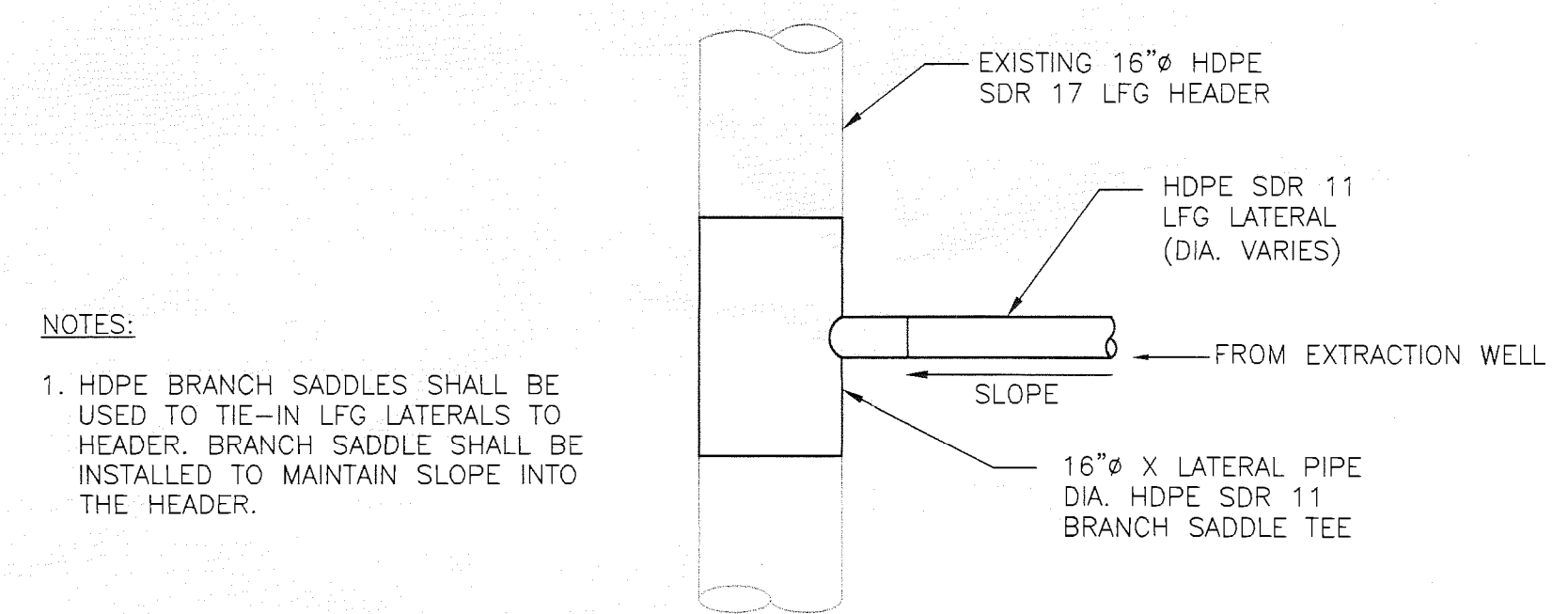


LFG COLLECTION TIE-IN TO LEACHATE CLEANOUT DETAIL 4
NOT TO SCALE
C-08

- NOTES:
1. CONTRACTOR SHALL CAREFULLY EXCAVATE AROUND THE LEACHATE RISER PIPING PRIOR TO TIE-IN. ANY DAMAGE TO EXISTING FEATURES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
 2. CONTRACTOR SHALL VERIFY LEACHATE COLLECTION RISER CONFIGURATION IN FIELD. THE CONFIGURATION OF THE EXISTING CONDITIONS SHOWN HERE IS FOR GENERAL INFORMATION PURPOSES ONLY.
 3. UTILIZE EXISTING LEACHATE CLEANOUT CONNECTION IF DEEMED ACCEPTABLE BY ENGINEER.

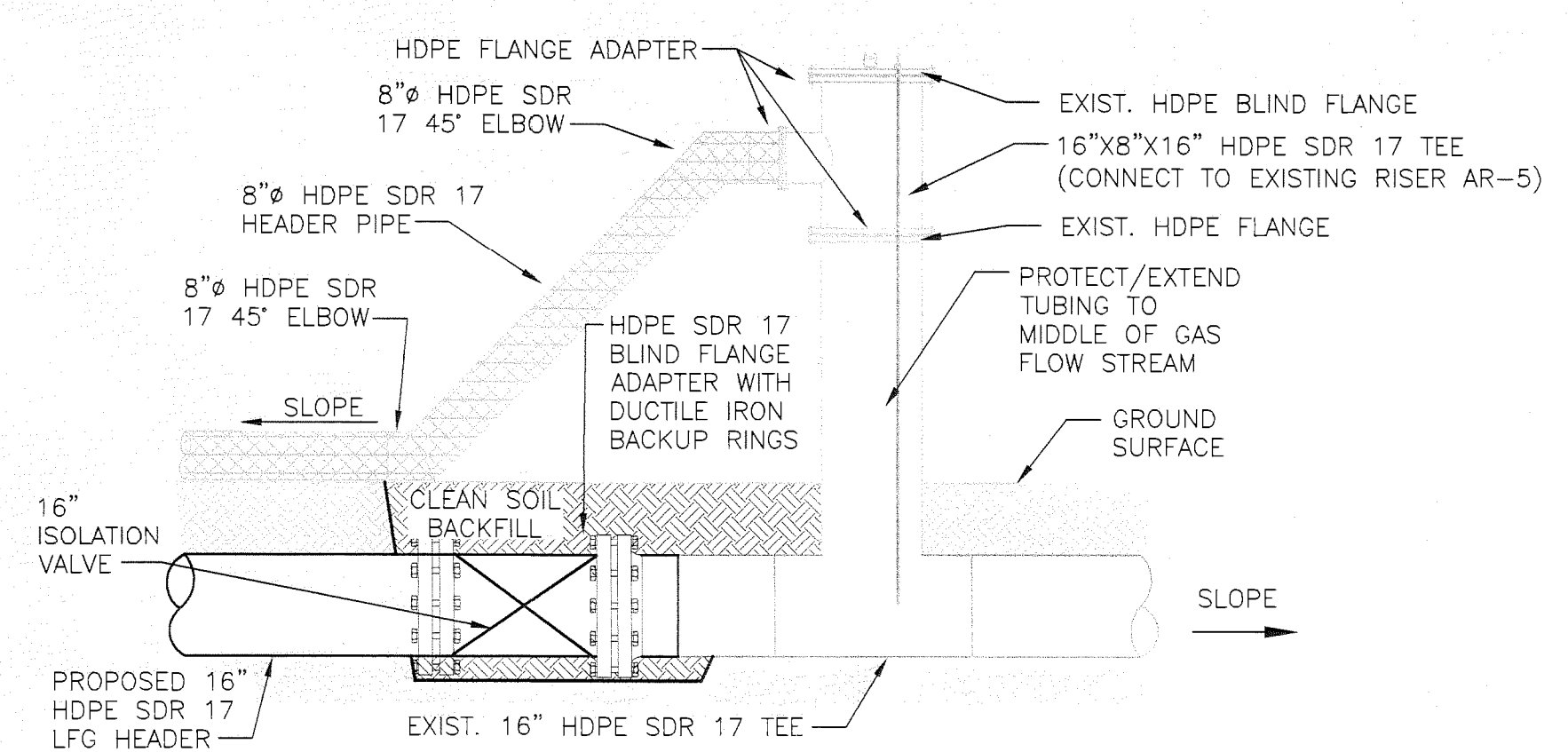


HEADER CONNECTION 3
NOT TO SCALE
C-07
C-08



- NOTES:
1. HDPE BRANCH SADDLES SHALL BE USED TO TIE-IN LFG LATERALS TO HEADER. BRANCH SADDLE SHALL BE INSTALLED TO MAINTAIN SLOPE INTO THE HEADER.

LATERAL TIE-IN WITH BRANCH SADDLE 5
NOT TO SCALE
C-08



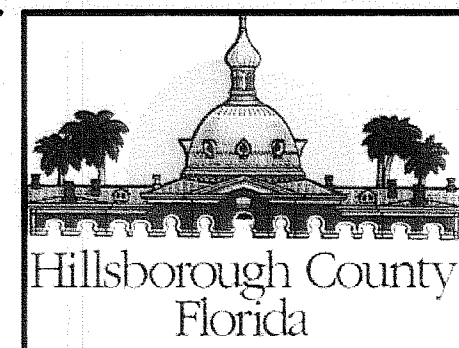
HEADER TO ACCESS RISER CONNECTION 6
NOT TO SCALE
C-07
C-08

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SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

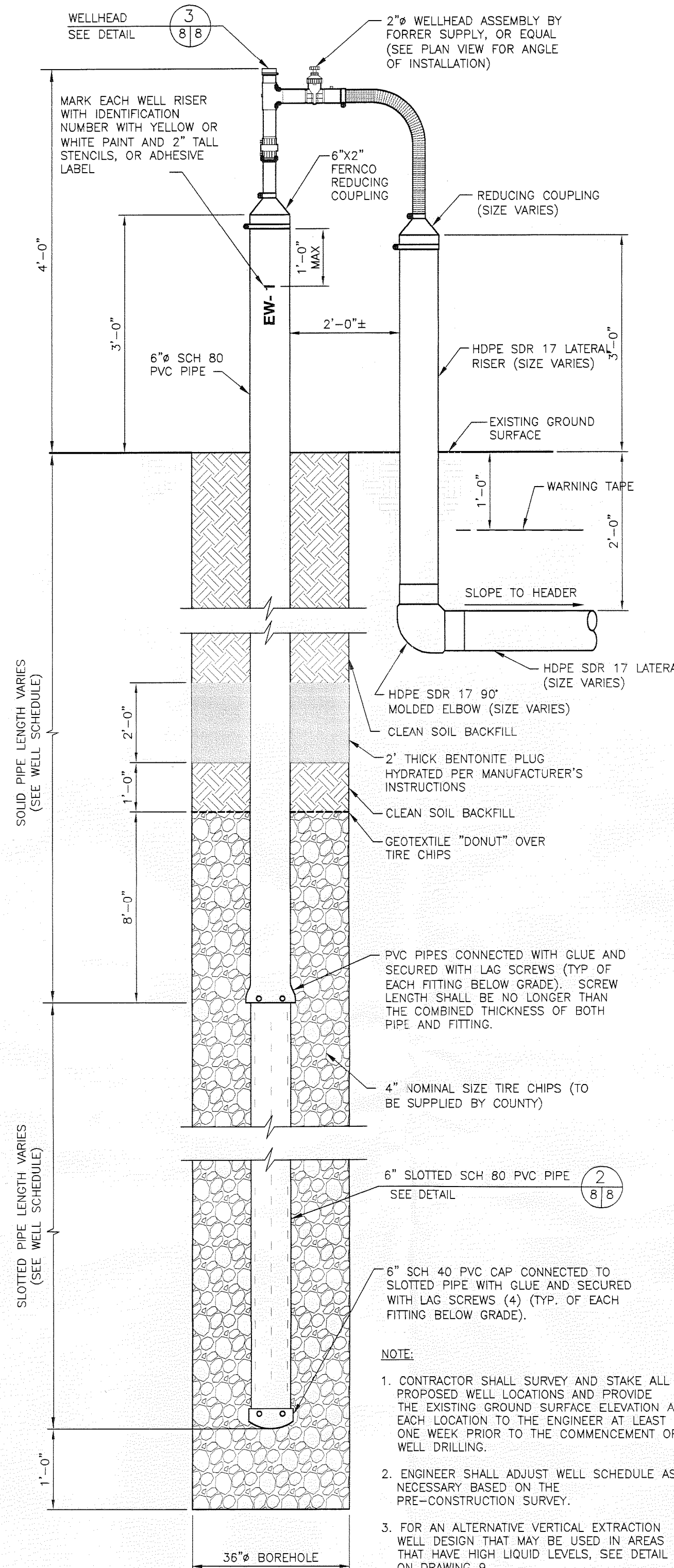
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOV 05 2012
SOUTHWEST DISTRICT
TAMPA

GCCS REPAIR DETAILS 2

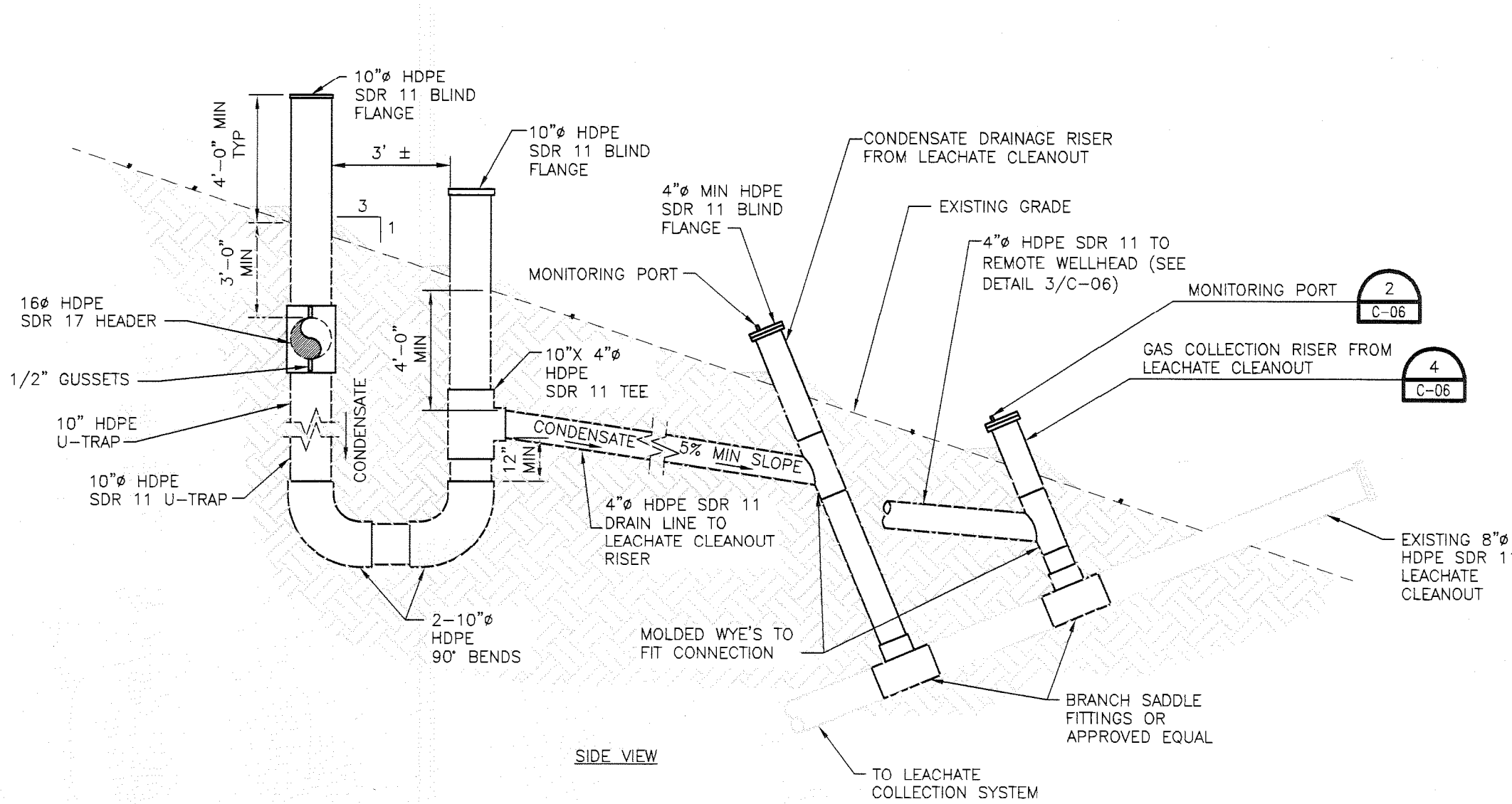
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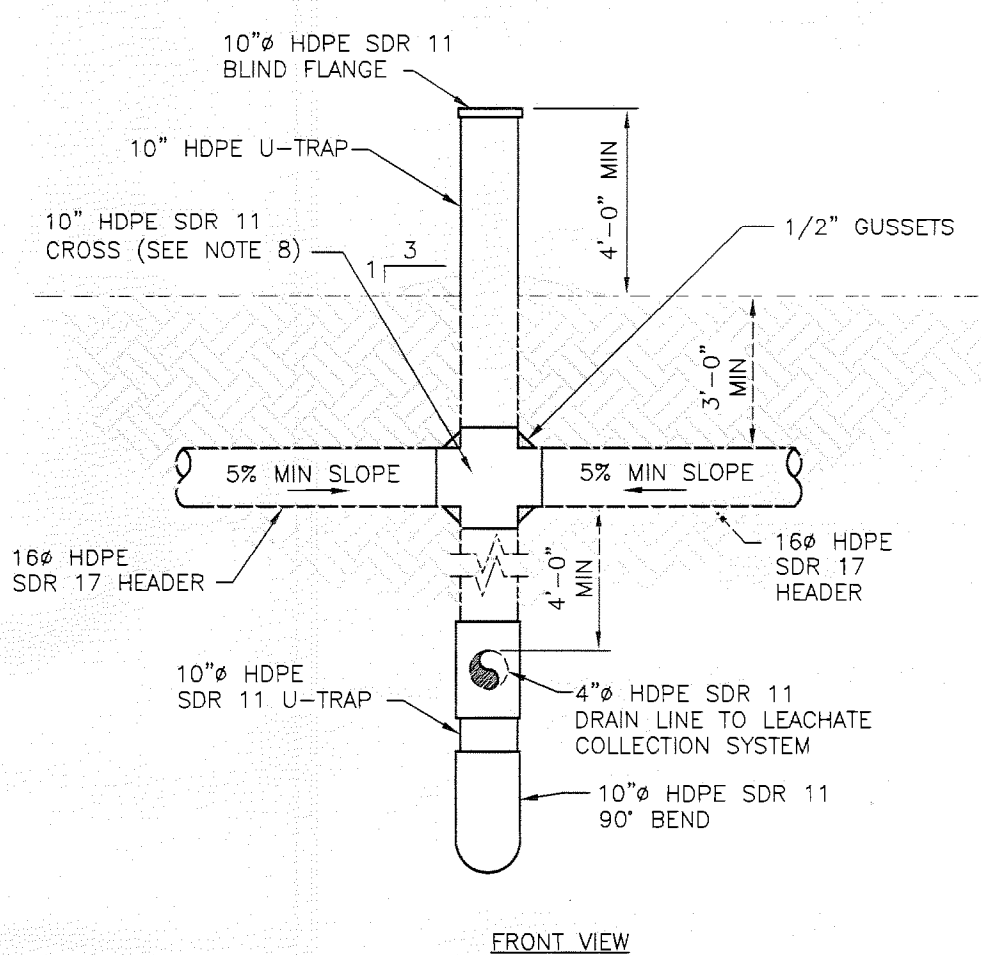
SHEET
C-14



LFG EXTRACTION WELL DETAIL 3 C-03



CONDENSATE U-TRAP FRONT/SIDE VIEW 1 C-03



CONDENSATE U-TRAP PLAN VIEW 2 C-03

WELL SCHEDULE									
Well ID	Northing	Easting	Approx. Ground Surface (ft)	Approx. Depth of Refuse (ft)	Well Depth (ft)	Slotted Pipe Length (ft)	Solid Pipe Length Below Grade (ft)	Solid Pipe Length Above Grade (ft)	Thickness of Tire Chips (ft)
EW-9	1,251,186	595,160	167.8	31	31	15	15	3	24
10B	1,251,445	595,331	151	45	35	24	10	3	

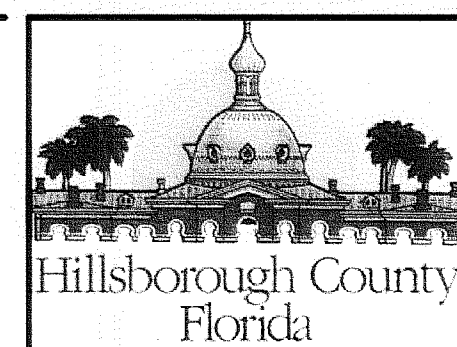
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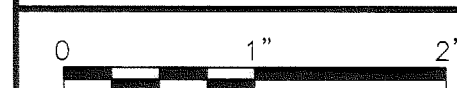
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SINKHOLE STAGE 5 ISOLATION OF IMPACTED CLAY LINER
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

GCCS REPAIR DETAILS 3

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOV 05 2012
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TAMPA



FILENAME	00C-13-14-15.dwg
SCALE	AS SHOWN

SHEET
C-15